JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

LEGAL DILEMMA OF CONSUMER PROTECTION UNDER ALGORITHMIC PRICING REGIME

Ugochukwu Ehirim
Delta State University of Nigeria
Email: ehirim.ug@delsu.edu.ng

Abstract

The emergence of smart technologies has introduced machine learning algorithms with increasingly sophisticated capabilities to predict the categories of goods a particular class of persons may purchase, and, within a determined price range, a development that has threatened the cardinal principles of privacy and pricing equity, thereby posing ethical and legal challenges. The prospect that algorithms could promote efficiency by optimizing markets dwindles in light of the grievous harm consumers suffer from a lack of pre-information and behavioral biases that disproportionately affect identifiable consumer groups. This paper examines the efficiency of current data governance and consumer privacy regulations, highlighting the need to balance regulation with the progressive social values of artificial intelligence (AI) technologies by evolving algorithm-centered approaches. It adopts the doctrinal methodology of juridical research to analyze primary and secondary source materials. It is demonstrated that most pricing algorithms discreetly violate the GDPR applicable in Europe and its legislative transpositions, including the Nigerian Data Protection Act (NDPA), which primarily protects consumers' rights in the European Community and Nigeria, respectively. It proposes the following solutions, among others: i) the liberalization of policing algorithms and other monitoring tools to enable users and civil society to track breaches of consumers' rights and extant laws effectively; ii) synergy among regulatory agencies across sovereign borders; iii) Adoption of China's cutting-edge policy unmasking the black box for proper interpretation of the AI decision-making process. These measures would streamline the battlefield by precisely defining the limits of AI's intervention in market forces and consumers' liberties.

Keywords: Algorithmic Pricing, Artificial Intelligence, Consumer, Data Governance, Privacy

JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

INTRODUCTION

The evolution of internet technology has defied the hitherto private domains of personalized data by enabling unhindered access to enormous amounts of information, thereby exposing individual consumers' data to the advantage of sellers or marketers who offer personalized prices to their consumers.[1] The trend has become a notable hallmark of the consumer economy around the globe, raising significant economic and legal puzzles and questioning the safety and security of consumers within market structures. The phenomenon may be referred to as surveillance pricing because such a pricing regime is anchored in a discrete analysis of the target consumer's class status and behavioral preferences. In 2012, it was shown that prices on the online sales giant platform, Amazon.com, were highly variable.[2] It was reported in 2001 that Amazon used AI to analyze customers' behavioral tendencies to offer personalized prices. Reimers and Waldfogel report of a consumer who accessed some mahjong tiles, which were put up for sale at $54.99.[3] The customer dropped the tiles into her online basket, only to discover the price had increased to $79.99. The lady emptied the cart and immediately picked up the item again. This time at $59.99. Other online trading platforms may stipulate prices based on an estimated location of the potential consumer. When a consumer lived within 20 miles of competing shops, staples.com consistently offered lower prices.[4] In Nigeria, algorithmic pricing is most prominent with *Uber*, whose services are primarily used by people who may be stranded or in dire need of transportation from one location to another. It has been shown that *Uber* charges higher fares to users with low-battery phones or in secluded or crisis areas, where such customers exhibit a proclivity toward desperation.[5]

---

[1] Mateusz Grochuwski et al, "Algorithmic Price Discrimination and Consumer Protection: A Digital Arms Race". *Technology and Regulation* (2022): 36-47. https://doi.org/10.71265/kd9w2w17.

[2] Imke Reimers and Joel Waldfogel, "Throwing the Books at Them: Amazon's Puzzling Long Run Pricing Strategy". *Southern Economic Journal* 83, no. 4 (2017): 869-885. https://doi.org/10.1002/soej.12205

[3] Reimers and Waldfogel, "Throwing the Books".

[4] Christopher Townley et al, "Big Data and Personalized Price Discrimination in EU Competition Law". *Yearbook of European Law* 36, no. 683 (2017): 687-9.

[5] Nichole Martin, "Uber Charges More if They Think You're Willing to Pay More". *Forbes* (30 March, 2019). https://www.forbes.com/sites/micolemartin1/2019/03/30/uber-charges-more-if-they-think-youre-willing-to-pay-more/?sh=7f9256c57365.

JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

The increasing concerns over infringements on individuals' data privacy by pricing algorithms, as well as the unequal, unfair treatment of consumers of the same product, inform vigilance regarding violations of consumers' statutory rights. Incidents of price discrimination, whether real or imagined, have resulted in formidable backlash from informed consumers. This was the case with Disneyland Paris in 2015, when it sparked public outrage for charging consumers different prices based on their country of domicile.[6] The public response shows that a granular price differentiation is considered exploitative and grave enough to attract state intervention. The evolving landscape presents interesting times for litigation attorneys. In *Gibson v. MGM Resort Int'l*,[7] the plaintiffs contended that a prominent Las Vegas Strip Hotel casino contravened the law by using an algorithmic price-fixing mechanism to obtain pricing data for the purpose of providing unlawful room-rate schedules that profited hotel operators at the expense of unsuspecting consumers. In a more recent development, the Columbia District initiated a lawsuit against 14 corporate landlords across the country who used RealPage software to coordinate centralized rent prices, thereby exploiting Americans.[8]

Statutory interventions like the General Data Protection Regulation (GDPR), designed for application to digital operations involving pricing algorithms, have exposed inherent price discrepancies and personalized pricing with underlying potential biases, though not in a generalizable way.[9] Li suggests that the foregoing inherent features, which justify the application of GDPR, sidestep prevailing algorithmic pricing through an affinity database mechanism, thereby challenging the very foundation of GDPR.[10] Consequently, Meituan, China's foremost online travel platform, charges its subscribers based on their organizational band and phone brand, so much so that iPhone users receive higher prices on the presumption that they are

[6] Jim Brunsden and Des Robinson, "Disneyland Paris Ditches Pricing Policy." *Financial Times* (2016). https://www.ft.com/content/e472ee c2-031b-11e6-af1d-c47326021344.

[7] *Gibson v MGM Resort Int'L* (Case No: 2:23 – CV – 00140 – MMD – DJA).

[8] *District of Columbia v RealPage Inc. & Ors* (Case No 2023 – CAB – 006762) (D.C Super July 2, 2024).

[9] Benjamin Wong, "Online Personalized Pricing as Prohibitive Automated Decision-Making Under Article 22 GDPR: A Sceptical View". *Information & Communications Technology Law* 30, no. 193 (2021). https://doi.org/10.1080/13600834.2020.1860460.

[10] Zihao Li, "Affinity-Based Algorithmic Pricing: A Dilemma for EU Data Protection Law". *Computer Law and Security Review* 46 (2022): 105705. https//doi.org/ 10.1016/j.clsr.2022.105705.

JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

wealthier and more financially capable.[11] Neither battery information nor specified phone brands constitutes personal data that could be used to identify particular individuals as falling within the scope of the GDPR. This is because the evolving affinity database mechanism does not profile a particular user, as in the case of *Uber,* but instead bypasses the GDPR to overreach consumers.[12] The law, therefore, should be dynamic enough to identify the evolving forms of algorithmic pricing and avoid the development of counter-technologies that could plunge the global digital market-space into crisis.

This research is imperative for suggesting, through legal analysis, ways to balance trade transactions with emerging consumer freedoms in the era of smart technology. The paper draws on recent works on AI and data protection by such authors as Porat, [13] Aloamaka[14], and Assad et al. [15] Assad et al., in considering the adoption of pricing algorithms in Germany, focused on price fixation in duopoly and triopoly market arrangements. The work ignores the ethical implications of the pricing device on the freedom of privacy and the legal principle of equality of all persons, thereby leaving a gap. Aloamaka, in analysing the NDPA 2023, referred to activities that could breach an individual's data privacy. He, however, did not mention pricing algorithms. Porat, on his part, while addressing the identified ethical questions of discrimination and intrusiveness, focused on Europe and the US, not refer to fledgling market economies in Africa, such as Nigeria. This paper bridges the gaps in the works of Assad et al., Aloamaka, and Porat by conceptualizing algorithmic pricing operations as a phenomenon that operates beyond the geographical boundaries of Western economies, in a manner capable of

[11] Wei Han, Yajie Gao and Ai Deng, "Algorithmic Price Discrimination on online Platforms and Anti-trust Enforcement in China's Digital Economy". *The Anti-trust Source* 2017, no. 1 (2018): 5.

[12] Monique Mann and Tobias Matzner, "Challenging Algorithmic Profiling: The Limits of Data Protection and Anti-Discrimination in Responding to Emergent Discrimination". *Big Data and Society* 6 (2019). https://doi.org/10.1177/2053951719895805.

[13] Haggai Porat, "Bargaining with Algorithms: An Experiment on Algorithmic Price Discrimination and consumer and data protection laws". *JEL Classifications* L ll, no. K 12 (2024).

[14] Patrick Chukwunonso Aloamaka, "A Critical Analysis of the Nigeria Data Protection Act 2023: Elevating Standards to Global Norms". *UCC Law Journal* 4, no. 2 (2025): 242-263. https://doi.org/10.47963/ucclj.4:2:1724.

[15] Stephanie Assad et al., "Algorithmic Pricing and Competition: Empirical Evidence from German Retail Gasoline Market". *The Journal of Political Economy* (2024). https://doi.org/10.1086/726906

JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

undermining consumer rights, and highlighting how emerging economies like Nigeria are grappling with it.

MATERIALS AND METHODS

This research employs a doctrinal legal analysis, evaluating primary and secondary legal sources on the subject matter. Specifically, the paper employs logical, systematic approaches in its analysis of the relevant literature. The logical approach provides a framework for enhancing the overall interrogation of the relationship between the legal protection of consumers, the sustenance of the e-market economy, and AI tools that appear to be driving the process. The systematic approach helps evaluate the basic principles of equality, data protection, and contractual autonomy in the context of technological innovations introduced into the landscape of modern commercial transactions. The particular approach is further reflected in the graduated structure of the paper. Both approaches are deployed in a fluid manner to construct evolving patterns from the perspective of consumer protection law in contemporary human society, highlighting the need for privacy protection. By identifying the operations of pricing algorithms in Europe, the USA, and developing economies such as Nigeria, this paper is a modest contribution to the discourse on the role of smart technology in commercial transactions.

RESULT AND DISCUSSION

A. Conceptualizing Algorithmic Pricing Phenomenon

The pricing algorithmic technology implicates the deployment of software to automate price fixation. This general definition excludes algorithms that could remotely influence pricing, including those used by donation-based live-streaming platforms.[16] The concept leverages personalized pricing to engage in price discrimination against potential consumers by analysing their personal preferences, features, and conduct, resulting in prices that are products of the increasing function of a consumer's willingness to pay.[17] It enables online sellers or platforms to offer different

[16] Shijie Lu et al, "Do Larger Audiences Generate Greater Revenues under pay what you want? Evidence From a live Streaming Platform". *Marketing Science* 40, no. 5 (2021): 964-984. https://doi.org/10.1287/MKSC.2021.1292 .

[17] Joost Poort and Frederick. J. Zuiderveen Borgesius, *Personalized Pricing: The Demise of the Fixed Price? 'Data Driven Personalization in Markets, Politics and Law* (Cambridge University Press, 2021).

JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

prices to multiple purchasers of the same goods based on data it generates about those consumers. Algorithmic pricing refers to a collection of predetermined pricing rules and strategies used to establish prices. Spann *et al. identify the basic differences between regular pricing mechanisms and algorithmic pricing as* the automation features peculiar to online pricing.[18] By automation, it is meant that an algorithm could be programmed to harvest an individual's shopping data, browsing history, and postcode to generate a consumer profile. The profile data enables the platform to forecast such a consumer's ability to pay or switch and tag prices appropriately. Where such personal and private data are harvested without the consumer's authorization or prior notice, a data privacy infringement issue arises within the complex expression of business autonomy. However, as Zeng and Li posit, there is an ongoing debate among scholars for a uniform definition of algorithmic pricing. [19]

Simply put, price discrimination describes the bottom line of algorithmic pricing. Suffice it to say that price discrimination is not novel in the offline market economy. It is manifest in three varying classifications. Steppe suggests that "Perfect" price discrimination, the first in the classification of price discrimination, refers to circumstances in which consumers are allowed to pay the maximum they can, so long as the seller maximizes profits from sales. [20]Another taxonomy of price discrimination is presented under the arrangement of 'the more you buy, the less you pay', which implies a greater discount for massive purchases. The last price discrimination mechanism, as conceived by Gerlick and Liozu, crystallizes in cases where prices are tagged according to social variables, particularly occupation, gender, residence, and age.[21] Algorithmic pricing devices may be classified based on the quality of the task assigned to them, the extent of managerial input, and the mechanism for distilling outcomes, such as whether they employ randomization or

[18] Martin Spann et al, "Algorithmic Pricing: Implications for Consumers, Managers and Regulators". *National Bureau of Economic Research (NBER) Working Papers Series* 32540 (2024): 5. https://www.uber.org/papers/32540.

[19] Rongxin Zeng and Xiaoshan Li, "On the Illegality and Regulation of Algorithmic Price Discrimination in China's Digital Economy". *Journal of Politics and Law* 16, no. 4 (2023): 37. https://doi.org/10.5539/jpl.v16n4p36.

[20] Richard Steppe, "Online Price Discrimination and Personal Data: A General Data Protection Regulation Perspective". *Computer Law and Security Review* 33, no. 768 (2017). https://www.doi.org/10.1016/j.clsr.2017.05.008.

[21] Joshua A. Gerlick and Stephen M. Liozu, "Ethical and Legal Considerations of Artificial Intelligence and Algorithmic Decision-making in Personalized Pricing". *Journal of Revenue and Pricing Management* 19, no. 85 (2020). https://doi.org/10.1057/S41272-019-00225-2.

JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

specification in making their decisions. The differentiation may also be determined by the ownership or controlling mind of the algorithm, such as the seller, as demonstrated by Amazon and certain affiliate sellers on Amazon, or by a platform like Uber, which balances demand and supply through its ride-sharing platform.

Notwithstanding the practice of individualized price-discounting marketing strategies in retail shops, real-time algorithmic pricing became notable in the 2010s. The phenomenon assumes somewhat of a household status as the online market economy continues to expand. To this end, it is most inappropriate to conceive of algorithmic pricing solely in terms of price discrimination for legal analysis. The term "discrimination," in its legal context, refers to prejudicial or unjust treatment of diverse groups of people. It is a normative term that portends bias and results in ambiguities. Algorithmic pricing may be beneficial across the board. Studies have shown that when an algorithm sets delivery prices at regular intervals for a restaurant or food delivery outfit, delivery costs are lower than uniform delivery charges, thereby demonstrating the pricing system's potential to enhance consumer benefits and restaurants' efficiency.[22] The adoption of a rent-optimization algorithm by real estate companies in 2019 resulted in prices that are more in line with microeconomic realities.[23] The price-fixing design of pricing algorithms may not be used to exploit individual persons, as the term 'discrimination' legally connotes. The system may be a marketing strategy among competitors rather than against unsuspecting consumers. Brown and Mackay demonstrate that the use of algorithms to price OTC allergy drugs by the most notable online retailers resulted in lower prices for consumers, with the firms whose algorithms updated prices more frequently showing the greatest effect.[24] They posit that frequent price updates undercut competitors rather than consumers. The argument for the benefits of algorithmic pricing for low-income consumers is inconclusive, given the diverse marketing variables that interact to shape price-related welfare outcomes. The fact that

[22] Alexander Mackay, Dennis Svartback and Anders G. Ekholm, "Dynamic Pricing and Demand Volatility: Evidence from Restaurant Food Delivery". *SSRN Electronic Journal Advance Online Prohibition* (2022). https://doi.org/10.2139/SSRN.3979147.

[23] Sophie Calder-Wang, and Gi Heung Kim, "Coordinated vs Efficient, Prices: The Impact of Algorithmic Pricing on Multifamily Rental Markets". *SSRN Electronic Journal Advance online Publication* (2023). https://doi.org/10.2139/ssrn.4403058.

[24] Zach Y. Brown and Alexander Mackay, "Competition in Pricing Algorithms". *American Economic Journal: Microeconomics* 15, no. 2 (2023): 109 - 156. https://doi.org/10.1257/mic.202110158.

JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

the pricing mechanism is not absolutely negative for consumers shows that the term 'discrimination', as the underlying word in the concept of algorithmic pricing, is misleading. It may therefore be safer to suggest a definition of online algorithmic pricing without reference to 'discrimination' or 'differentiation' in price. Price fixation suffices for legal analysis. The operations of pricing algorithms generally create the potential for collusion and price-fixing among competitors who may be oblivious to the collusion, thereby artificially inflating prices and hampering competition. Where such outcomes demonstrate an illegal agreement rather than mere "conscious parallelism," a crime may attach.[25]

B. Economic Implications of Engaging Algorithmic Pricing

The evolution of pricing algorithms, which is receiving exponential adoption across the e-commerce economy, has raised legal and socio-economic challenges. Part of the utility of civil-liberty statutes is the prohibition of disparate treatment of individuals that is construed as discrimination. Bar-Gill *et al* suggest three fundamental taxonomies of algorithmic discrimination that implicate its negative impacts in legal analysis.[26] These refer to quality discrimination, price discrimination, and race- or sex-based discrimination. It follows that where algorithms take cognizance of inherently discriminatory human judgments, their decision outcomes will reflect discrimination. This outcome is exemplified in the Amazon recruitment algorithm, which showed bias against women based on its male-overbearing training data. The social backlash was spontaneous, prompting immediate disengagement of the software.[27]

The benefits of algorithmic pricing for low-income consumers serve to negate the blanket label of adversity on the AI phenomenon. In the process of price fixing, algorithms show the propensity to engage in both statistical and test-based discrimination, highlighting the unlikelihood of unconscious bias inherent in most human decisions. It follows that a significant degree of sexism

[25] Ariel Ezrachi and Maurice. E Stucke, "Artificial Intelligence & Collusion: When Computers Inhibit Competition". *University of Illinois Law Review* 32 (2017):1775, 1795.

[26] Oren Bar-Gill, Cass R. Sunstein and Inbal Talgam-Cohen, "Algorithmic Ham in Consumer Markets". *The Harvard John M. Olim Discussion Paper Series* 01 (2023). https://www.law.havard.edu/programs/olincenter.

[27] Jeffrey Dastin, "Amazon Scraps Secret AI Recruiting Tool that showed Bias against Women". *REUTERS* (10 October, 2018). https://www.reuters.com/article/US-amazon-com-jobs-automation-insight/amazonscraps-secret-ai-recruiting-tool-that-showed-bias-against-women-idUSKCN1MK08G.

JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

and racism interact to produce outcomes relating to the ability to pay, willingness to repay, and other characteristics. Gallis refers to the features of sex and race in the circumstances as crude proxies devoid of excellence, whereas algorithms are known to engage excellent predictors.[28] The isolated cases of discrimination do not diminish the benefits of the emerging trend, given how easily algorithmic discrimination can be detected compared with human-enabled discrimination. Besides, consumers could de-escalate the implications of algorithmic price discrimination, unlike human discrimination, by concealing their salient features and fare better, especially such consumers with expertise in navigating digital environments. Notwithstanding the benefits of engaging algorithms in the pricing enterprise, much industry discourse on the subject dwells on aspects related to algorithmic collusion, implicating the involuntary moderation of prices among algorithms owned and controlled by diverse merchants, producing prices beyond competitive value. Collusion among algorithms for price fixation justifies the revelations and fears of consumers, who are more circumspect about engaging with the online market economy. In an oligopolistic market, such apparent collusion could intensify competition among sellers, resulting in improved consumer welfare. [29]

Another implication of algorithmic pricing is consumer apathy resulting from negative attitudes or misrepresentation. The disposition of consumers in these circumstances is traceable to a basic aversion to differential treatment and the apprehension of being profiled by a somewhat ubiquitous "black box" whose outcomes depend on consumers' personal data. Consumer skepticism stems from a fundamental view of autonomy and fairness. Consumers' conception of fairness may have regulatory effects after all. To this end, consumer backlash has curbed the opportunistic use of pricing algorithms and, in the process, engendered a moderate price disparity that has demonstrated ethical superiority over multilateral pricing.[30]

Algorithmic fairness is underscored by a notion of autonomy that goes beyond the "right to choose," particularly the liberty to contract voluntarily. The act of buying and selling is no doubt contractual. Price discrimination is

[28]Talia B. Gillis, "The Input Fallacy". *Minn. L. Rev* 106 (2022): 1184. https://ssrn.com/abstract=3571266.

[29] Oren Bar-Gill, "Consumer Misconceptions in a Hoteling Model: with and without Price Discrimination". *J. INST & THEORETICAL ECON*. 176 (2020): 180.

[30] Jerod Coker and Jean-Manuel Izaret, "Progressive Pricing: The Ethical Case for Price Personalization". *Journal of Business Ethics* 173 (2021): 387.

JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

built on the premise of the capacity to purchase and the willingness to supply by actors on both sides of the bargain. Autonomy, therefore, encompasses parties' rights to control their individual data with due regard to privacy. Where such private data is supplied voluntarily, it becomes a tool for algorithms to generate 'just prices. Algorithmic pricing may, after all, produce fair and just price regimes in which every customer is offered prices that align with their socio-economic status. This regime eventually creates inequality, reflected in the customers' aversion to being personalized and exploited because of their status. Autonomy, which encompasses the liberty to enter into business agreements, is enshrined in Article 16 of the European Union (EU) Charter. The Court's stance in Sky Österreich on the liberty to conduct business covers all economic activities as well as the parties' contract.[31] The CJEU, in an earlier case, *Commission v Belgium*,[32] interpreted the liberty to contract to consist in the liberty of choice of business partners as well as the capacity to determine prices for services rendered. Consequently, online market actors are at liberty to set specific prices for specific customers, whether by human decision-making or through digital mechanisms. The EU law appears to justify online algorithmic pricing in a manner that steps aside from data subjects' rights, particularly when such pricing outcomes are affinity-based. The entire operation of pricing algorithms is intertwined with data sanctity, so much so that algorithmic pricing is only possible when consumers' data are accessible, often without authorization. However, under the EU's hierarchy of laws, an individual's freedom to have his personal data protected, as well as his rights to privacy and family life, is as fundamental as the liberty to transact business. It is, therefore, unsettled which law will prevail in a conflict situation. In analysing the liberties and the legal safeguards for personal information, Aloamaka posits that safeguarding personal information is a statutory liberty, enforceable by the same mechanism for enforcing Fundamental Freedoms enacted in the Constitution of Nigeria.[33] This implies that such constitutional statutory protection overrides any legislation granting autonomy in commercial transactions in all circumstances. However, under a strict interpretation of EU law, the regime for the protection

[31] Case C-283/11 *Sky Osterreich* [2013] ECLI:EU: C: 2013:28 (CJEU).

[32] Case C-4367/04 *Commissioner v Belgium* [2007] ECLI:EU: C: 2007:178, [2007] ECR 102513, para 51.

[33] Aloamaka, "A Critical Analysis".

JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

of an individual's personal information may take a back seat, a situation at variance with many municipal statutes of member states.

The right of suppliers to set prices is directly proportional to the rights of consumer parties to withdraw from the contract. The law gives consumers two weeks to rescind a contract made online or by proxy. This implies that a consumer is at liberty, within the stipulated timeframe, to enter into a new contract and repudiate an earlier one upon discovering that the latter contracted at an exorbitant price for the same products. In the case of PE Digital, the consumers sought redress upon discovering a lower price offered to other consumers for the same products. The Court in the case declared the factors to be considered in determining excessive price to include the price offered by the particular seller to consumers of similar products under the same conditions. The decision resonates with the critical stipulations in the guidelines adopted by Europe's Board of Data Protection in prohibiting high prices resulting from an automated pricing mechanism. [34]

C. Pricing Algorithms and Application of Data Protection Law: Any Relevance?

The metaverse entails the practical reduction of the globe to a single unit by obliterating geographical borders. [35] The result is that the online market economy is available to any participant at the touch of a button, irrespective of the distance between demand and supply. The need for internet governance has enabled independent legal domains to address emerging public concerns about the prevalence of online pricing algorithms. The similarity of internet operations encourages uniform approaches that may defer only to state enforcement authorities. Consequently, consumer protection laws and competition laws offer credible regulatory options, given the propensity towards algorithmic collusion that tends towards market dominance and infringes on consumer protection, including the sanctity of consumers' data. China has developed an e-commerce law that resonates with Europe's anti-discrimination law. [36] To this end, engaging with data protection laws in the operation of pricing algorithms may be justified to protect consumers' identity and privacy, reputation, equity, and autonomy.

[34] Article 29 Working Party (WP) 'Guidelines on Automated individual decision – making and profiling for the purpose of regulation 2016/67' revised 6 February 2018, 22.

[35] General Data Protection Regulations (EU) 2016/679, Art. 3.

[36] Jiangqiu Ge and Li Chen, "The Obligation to Provide 'Non-Personalised Search Results under the Chinese E-commerce Law". *Computer Law & Security Review* 41, no. 2 (2021): 366-383.

JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

Price-fixing algorithms depend on attitudinal data and personal information to such an extent that they infer a customer's personality from affinity data, exposing customers' behaviors, private lives, confidential preferences, and health status. The abuse of the price-setting technology, therefore, endangers consumers' privacy and infringes their rights to data autonomy. Also, the potential of big data platforms to unleash ubiquitous algorithms that engage in random data harvesting for customer assessment results in a breach of a person's reputational interests beyond a single business transaction, when such information is deployed to manipulate customers unconsciously. This becomes the case when such data is perpetuated without the profiled customer's consent or knowledge. The USA Airline Tariff Publishing Company (ATPCO), a company jointly owned by notable airline operators, declared its willingness in October 2019 to develop a pricing device capable of adjusting prices using data from consumers' previous transactions. Yang confirms that big data corporations such as Apple, Acxiom, Datalogix, and Amazon harness data on consumers' transactional behaviors, as well as personal information such as medical records, and furnish it to retailers.[37] In the circumstances, the data protection law becomes a recipe for balancing lawfulness, transparency, and fairness within the context of business autonomy. Any inquiry that uses or exposes an individual's status falls within the web of data regulation, in its broadest application. The CJEU has given a broad interpretation of what constitutes under Article 29 WP, demonstrating the law's elasticity in accommodating a wide range of cases.[38]

Another justification for invoking the data protection law regime for algorithmic pricing is its salient advantages over other species of consumer protection statutes. Data protection law is fortified with inherent remedies for aggrieved consumers. It is expansive enough to provide ex-post judicial relief as well as ex-ante remedies through its risk-based mechanism, thereby guaranteeing the legal sanctity of users' personal information. Thus, the twin mechanisms of data regulation through the design and default thresholds (DPBD) and the assessment of the impact of data protection (DPIAs) serve to identify tangible algorithmic risks before any resulting infringement. Porat identifies the rights inherent in data protection laws, which are relevant to algorithmic pricing regulation, including data disclosure mandates, right to protection from data collection ex-ante, also known as 'cookies laws' widely used in Europe and the USA, and the right against data retention ex-post, also conceived as the freedom to be forgotten or erasure laws. These GDPR

[37] Kai Hao Yang, "Selling Consumer Data for profit: Optimal Market – segmentation Design and its consequences". *AM. ECON. REV*. 112 (2022): 1364 – 65.

[38] Nadezhda Purova, "The Law of Everything: Broad Concept of Personal Data and Future of EU Data Protection Law". *Law, Innovation and Technology* 10 (2018): 41-43. https://www.tandfonline.com/doi/full/10.1080/17579961.2018.1452176.

JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

safeguards are also enacted in the California Consumer Protection Act (CCPA) of 2018.[39] For example, section 1798.100B of the CCPA provides for disclosure to the consumer of the quantum of personal information about him that a business has collected and the rationale for such collection. The data protection statute addresses the chilling effect of online pricing mechanisms, unlike the consumer protection law, which requires a potential claimant to become a customer as a prerequisite. The data protection law applies wherever and whenever personal data is collected or utilized, whether or not the data subject is a customer.

D. Regulatory Challenges to Data Protection Law by Algorithmic Pricing

Europe is a vantage point for analyzing the success of regulations on pricing algorithms because of its strong commitment to consumer protection, despite market liberalization.[40] The jurisprudence of consumer protection focuses on competition law, with a vigilant eye on the exploitative proclivities of big corporations to ensure price fairness. In this regard, EU consumer law is more concerned with transparency in price offers than with the activities of price-fixing algorithms simpliciter. This reasoning is based on the belief that the result of algorithmic pricing is not entirely negative. The Consumer Rights Directive (CRD) allows sellers to offer differentiated prices to certain persons or groups of persons using automated systems.[41] However, the transparency requirement is reinforced by Directive 2000/31/EC on e-commerce (ECD), which obligates EU Member States to ensure that such automated prices are clearly stated without equivocation.[42] Consequently, both the seller and the buyer are entitled to the unit prices, weighed in kilograms or liters, as the case may be, under the price indication directive (PID).[43] It is doubtful whether the unfair commercial practices directive (UCPD) mandates any additional

[39] Porat, "Bargaining with Algorithms", 3.

[40] See Articles of the Charter of Fundamental Rights of the European Union; Articles 12, 114(3) and 169(1) of the Treaty on the Functioning of the European Union (Consolidated Version) [2012] OJ C326/47.

[41] Recital 45, Directive 2011/83/ EU (n. 43).

[42] Article 5(2) of the Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on Certain Legal Aspect of Information Society services in particular electronic commerce, in the internal market (Directive on Electronic Commerce) [2000] OJ L 178/1.

[43] Directive 98/6/EC, Art 3 & 4. See also, Directive 2019 amending the European Parliament and off Council of 27 November 2019 amending 2011/83/EU of the European Parliament and of the Council enacting the enforcement and modernization of Union Consumer Protection Rules [2019] OJ L328/7, Article 2.

JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

disclosure from sellers beyond price and personalization.[44] Under the European liberal market, the consumer may elect not to be profiled by switching parameters where information is abundant.[45] A community reading of the CRD and UCPD instruments demonstrates that both instruments depend on the full harmonization doctrine, thereby implicating uniformity across Europe, where all member states are barred from enforcing stronger or weaker protection policies in their domestic markets.[46]

Notwithstanding the various guarantees provided by consumer protection law, directives which generally apply to online individual-interests without particularisation to price differentiation may be extended to online algorithmic pricing devices. The GDPR apply to protect natural individuals' private data.[47] The GDPR is widely couched to complement the various directives for consumer safeguard under digital-commerce arrangement to the extent that other legal parameters such as consent or contractual exigencies may be required to justify algorithmic price differentiation. Whatever justification advanced by the data processor, Article 13(1) and 13(2) of the GDPR prescribes, in the circumstances, that the consumer in shall be specifically told the reason for profiling, especially why algorithmic tool should be engaged to achieve that purpose.[48]

Regrettably, the provisions of the GDPR have not produced a consumer manipulation-free market environment because the market situation that would invite the GDPR legal regime is subject to divergent opinions. Zhao suggests that such entitlements to explanation engineered by data regulation statute is strengthened to address the breaches enabled by pricing algorithms in the online market space.[49] Belgium led the way when the Belgian Data Protection Authority categorised advertisement for price reduction as having

[44] UCPD [2005] OJ L 149/22, Art. 7(5).

[45] Such options are necessary for autonomy of contract. See, Marijn Sax, Natali Helboreger and Nadine Bol, "Health as a means towards Profitable Ends: Health Apps, User Autonomy, and Unfair Commercial Practices". *Journal of Consumer Policy* 41 (2018): 109.

[46] See C-343/12, *Euronics Belgium,* ECLI:EU:C:2013:154 (Order made by the court on 7 March 2013).

[47] Regulation 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of personal data of natural persons and on the free movement of such data and repealing Directive 95/46/EC (General Data Protection Regulation) [2016] OJ L119/1.

[48] See also, Art. 22(1), & (4) GDPR.

[49] Zeyu Zhao, "Algorithmic Personalized Pricing with the Right of Explanation." *Journal of Competition Law & Economics*. (2023). https://academic.oup.com/jcle/advance-article/doi/10.1093/joclec/nhad008/7259590.

JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

sufficient legal effect to evoke enforcement of the provisions of GDPR.[50] It follows that where the price offered passes for an invitation to contract, Article 22 of GDPR becomes applicable to the personalised price. The EU GDPR provisions on automated decision-making (ADM) appears elastic enough to accommodate diverse toolkits including: freedom to be exempted from ADM and freedom to object for effective governance of automated pricing strategies.[51] In 2016, the CJEU held that Cookies, Internet Protocol (IP) Addresses device, MAC addresses and similar data accessors are carriers of personal data with peculiar identities capable of tracking individual data-subjects for specific purposes. [52] The decision further commends the unified application of GDPR to similar and emerging technologies with access to personal data.[53] However, for effective engagement of the consumer protection status within the online market space, a definitive construction of prohibitively high prices is necessary. The Guidelines to Article 25 Working Party (WP) adopted by Europe's Data Protection Board suggests more definite cases of electronic differential prices. EU member-states are encouraged to take bold steps as Belgium did to ensure pragmatic fairness of prices without introducing prohibitions to opaque market strategies as supplements to the UCPD and CRD. The clarity of the nature and scope of transparency required for proper consumer protection should not be left to academic dialectics. Harmonisation of all legal principles which takes the peculiarity of states into cognisance is suggested in the circumstances. In *Caja de Ahorros,*[54] the Court affirms that although the UCTD attempts to harmonise States' data regimes, yet it does not bar any nation's judiciary from ensuring fairness in contractual matters whether or not such terms of the contract are expressed in simple, common language. The proposed liberty of member states to act independently has restricted resonance, at least it has produced discordant

[50] Commission for the Protection of Privacy Belgium Opinion no. 35/2012, para 80. https://www.autoriteprotectiondonnes.be/publications/avis-n-35-2012.pdf.

[51] Fabrizio Esposito, "The GDPR Enshrines the Right to the Impersonal Price." *Computer Law & Security Review* 45 (2022): 105660.

[52] Case C - 582/14, *Patrick Bieyer v Bundespublic Deutschland* (2016) ECLI: EU: C: 2016: 779.

[53] Art. 4(1) GDPR defines personal data as "(i) any information (ii) relating to (iii) an identified or identifiable natural person", which can be further grouped into personal data and pseudonymous data. Anonymous data which is also provided for by GDPR is largely ignored. See Paul Voigt and Axel von dem Bussche, *The EU General Data Protection Regulation (GDPR): A Practical Guide* (Springer International Publishing, 2017).

[54] *Caja de Ahorros v Monte de Piedada de Madrid*, C-484/08: ECLI:EU:C:2010 (Judgment delivered on 3 June 2010):309.

JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

responses. By the provisions of Article 29 WP, where it is not possible to trace data movement to a specific individual but such data impacts individuals' interests or liberties, such data is classified as personal data. [55] Consequently, personal data is construed to encompass subjective data, evaluations and opinions which are not needed to be established as true. A significant disconnect exists between the stipulations of the WP and the CJEU jurisprudence on what constitutes personal data. This is exemplified in Poland's objection to the 'gender equality' expression in the Fundamental Rights Charter, in respect of digital switch and the AI phenomenon.[56]

The inability to effectively regulate market prices propels the evolution of another racial genre creating a distinction between the utility of algorithms for consumer protection, and as mere devices in the evolving digital market. The divergent views of scholars on the potency of the GDPR to regulate algorithmic pricing generally notwithstanding, the instrument makes salutary provisions that may engage accountability and transparency of online algorithmic functions. The GDPR stipulates the carrying out of DPIAs prior to any operations that may occasion high risk on individuals' liberties, including online algorithmic pricing designs. This ex-ante prescription compels corporate users to identify personal data, evaluate the consequence of processing such information and introduce measures to ameliorate veritable privacy infringements.[57] By this mechanism, variables like tracking data, IP address and previous data on purchasing productivities used to determine pricing are examined for the purpose of ascertaining the propensity of bias, for unfair profiling of individuals or community of persons. Another excellent safeguard in the regulation of algorithmic pricing is the privacy by design (PBD) requirements. This mechanism implicates integration of information-protective features from the incubation of the algorithmic configuration onto its engagement in business practices.

Existing legal framework in Nigeria does not adequately address abuse or extortionist deployment of algorithms against citizens, particularly

[55] A See for example: Cases C – 141 α 372/12, *YS, M and S v. Minister voor Immigratie, Integratie en Asiel*, 2014 E. C. R. I – 2081: 45 – 47.

[56] EU Presidency Conclusions on "The Charter of Fundamental Rights in the Context of Artificial Intelligence and Digital and Digital Change" (11481/20); Grochowski, "Algorithmic Price Discrimination".

[57] Justin P. Johnson, Andrew Rhodes and Matthijs Widenbeest, "Platform Design When Sellers Use Pricing Algorithms". *Econometrica* 91, no. 5 (2023): 1841-79. https://doi.org.10.3982/ECTA19978.

JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

consumers in online market space. [58] Consequently, it is required under the PBD stipulations that protection mechanisms be inbuilt into the algorithmic infrastructure and sundry applications which play roles in price determination outcome. [59] Saputra *et al* suggest the integration of ethical issues from design through implementation and utilisation of algorithms in order to reduce bias and other harms associated with AI. [60] These regulatory options manifest in pseudonymisation and data minimisation, ensuring that individual-users' data are accessed for specific purposes. It is suggested that a functional PBT arrangement must ensure that algorithms are configured in such a manner as to make them adapt, learn and develop functionalities beyond their initial design in order to cope with evolving data technologies. The GDPR also provides for audits of the functionality of the algorithmic pricing device to enhance revenues to consumers whose rights are infringed by pricing algorithms. This excellent regulatory approach is fundamental in all cases relating to data freedoms, particularly the liberty to object, freedom to access, entitlement to erasure, freedom of rectification, including the right against ADM.[61]

The privilege to access implicates an entitlement to explanation which underscores transparency, providing users with evidence and materials to redress infringements by pricing algorithms.[62] This right is, nonetheless, limited by the intellectual property entitlements which inure in favour of the sellers as well as the right to security of trade secrets. The GDPR prescribes the liberty to object to profiling and access to personal information, remarkably for purposes of direct marketing except in any situations of overriding legitimate grounds.[63] It is argued that the provision's application to online algorithmic pricing echoes some uncertainty, especially with respect to the definition of direct marketing. Article 4(3) (F) of the mooted e-privacy

[58] Festus Okechukwu Ukwueze and Justin Ibegbulem Dike, "Deconstructing Nigeria's Data Protection Regime from Consumer Protection perspective". *The Law, State and Telecommunication Review, Brasilia* 13, no. 1 (2021): 11. https://doi.org/10.26512/Istr.v13i1.31850.

[59] Art. 17 GDPR D (4)63b, Art. 16 GDPR.

[60] Beny Saputra, "Hungary's AI Strategy: Lessons for Indonesia's AI Legal Framework Enhancement". *Jambe Law Journal* 7, no.1 (2024): 51. https://dci:org/10.22437/jly:7.1.25-58.

[61] Zihao Li, "Regulating Online Algorithmic Pricing: A Comparative Study of Privacy and Data Protection Laws in the Eu and US". *Transatlantic Technology Law Forum (TTLF) Working Papers* 114 (2024):14. http://ttlf.standford.edu. .

[62] Art. 15, GDPR.

[63] Art. 21, GDPR.

JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

regulation in its definition of direct marketing communications narrows down to advertising. Algorithmic pricing goes beyond advertising, to include valid contract of sales and purchase. Given that the construction of GDPR provisions tend towards consumer protection against the backdrop of expansive algorithmic pricing influence, policy directives must be geared towards developing specialised consumer protective technologies. This could be done by using a bottom-up approach to the incubation and manufacturing of online market tools. Lippi *et al.* conceive technologies that empower consumers to contain harmful algorithmic pricing outcomes, such as opaque, unlawful practices, bias, information overload, and multimedia manipulation of consumers, and so on. The intentionally opaque nature of some commercial practices denies consumers knowledge of infringing acts and their consequences, thereby preventing legal responses. Individualized pricing, shrouded in opacity, can be exposed by comparison devices that detect unfair clauses through a unique data-processing engine.[64] Texts could be analyzed by ordinary language processing applications to filter out unfair and illegal content. Instruments should be developed to grant immunity to rights activists, bureaucrats, researchers, and the general public who hide or fake their identities to uncover vendors that offer differentiated prices for the same products. It has been suggested that the watchdog technique could be engaged to combat biases in price offers. AI-enabled ad blockers and anti-tracking technologies have proved effective in warding off and filtering manipulative multimedia messages targeted at consumers. The development has moderated the incidence of consumers' data harvesting by dark patterns.[65]

E. Fundamental Concerns for the Regulation of Pricing Algorithms

Algorithmic pricing has enhanced efficiency and ease of doing business within the online market space. However, there have been corresponding concerns about the flip side of the mechanism requiring bureaucratic intervention of regulatory agencies for the safeguard the liberties and interests of consumers. Three of these concerns would suffice. The outcomes of pricing algorithms portend unfair pricing regime to profiled consumers. This is the situation with *Uber* and Lyft's prices hike during emergencies such as bomb

[64] Marco Lippi et al, "CLAUDETTE: An Automated Detector of Potentially Unfair Clauses in Online Terms of Service." *Artificial Intelligence Law* 27 (2019): 117-139. https://doi.org/10.1007/s10506-019-09243-2.

[65] Jamie Luguri and Lior Jacob Strahlevitz, "Shining a Light on Dark Patterns". *Journal of Legal Analysis* 13, no. 1 (2021): 43-109. https://doi.org/10.1093/jla/laaa006.

JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

explosions, earthquakes, terrorist or herdsmen attack in Nigeria and floods in America.[66] Dynamic pricing could be a veritable instrument of discrimination. This could be demonstrated by understanding the pricing mechanism of airlines which benefit leisure consumers who arrive early as against the business travelers who arrive later. The algorithms are programmed to be driven by demand elasticity of market forces which might adversely affect financially disadvantaged consumers of goods such as energy products. In another development, Dube and Misra posit that algorithmic price discrimination also arises from personalised pricing.[67] The scholars found that the rise of *zip recruiter* pricing algorithm shut up the profit margin of its controllers by 19% for relatively optimised price and by 86%, relative to non-optimised flat price. Pricing algorithms may offer collusive prices in a market-setting where a cartel's machinery to sanction deviance is weak or nonexistent. It has been demonstrated that a Large Language Model (LLM) based pricing device smartly collude in oligopoly arrangements without the slightest suggestion of collusion.[68] This is so because sophisticated algorithms progressively learn to issue software competitive prices without reference to one another, resulting in sustained high prices against the liberties and benefits of consumers. The engagement of pricing algorithms has hiked prices and sustained such excessive prices in Germany's retail gasoline market as well as real estate markets in the USA. [69] Regulators should be concerned about the capacity of pricing algorithms to create price bubbles in like manners as content creators deploy algorithms to construct echo chambers. This is the outcome of a situation where reliance is placed on pricing algorithms which harness their inherent capacity to propagate false data or errors in the market, whether in an oligopoly or free market setting. The USA sellers and buyers depended on pricing outcomes from estimation algorithms engaged in the buying and selling decisions of properties during COVID-19 pandemic. It was

[66] Emily Crane, "Uber, Lyft Ripped for Surging NYC Prices during Storm, Flooding 'Shine Balls'". *New York Post* (29 September, 2023). https://nypost.com/2023/09/29/New-Yorkers-rip-uber-lyft-for-surging-prices-during-storm/.

[67] Jean-Pierre Dube and Sanjog Misra, "Personalized Pricing and Consumer Welfare". *The Journal of Political Economy* 131, no. 1 (2023): 131-89. https://doi.org/10.1086/720793.

[68] Sara Fish, Yannai A. Gonczarowski and Ran I. Shorrer, "Algorithmic Collusion by Large Language Models". *arXiv* (2024). https://doi.org/10.48550/arXiv.2024.00806.

[69] Assad et al., "Algorithmic Pricing".

JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

demonstrated that the algorithms interfaced with human behaviour (feedback loop) to generate obvious errors, persistently.[70]

F. Statutory Paradigm for Consumer Protection and Sundry Concerns

The two leading jurisdictions in terms of regulation regimes of data laws are Europe and the USA. Both jurisdictions have statutory frameworks that produce remarkable differences in addressing online algorithmic pricing, especially in the areas of access to personal data, privacy and general consumer protection. The difference is notably attributed to cultural differences, governmental policies and mutual competition for control of the online space, an ecosystem that translates the entire universe into one without geographical boundaries. China's approach has been described as a balance between the extremes of the USA and Europe.[71]

The USA leverages its data privacy statutes, trade laws as well as the Financial Services Modernization Acts of 1999[72] to track infringements by big data companies on consumer rights. The country's legal regime demonstrates a complex, fragmented, sector-based arrangements directed at particular data species or industries from federal and state regulators. Issues of regulation of citizen's privacy under the USA's legal architecture evoke a patchwork of laws cutting across the federal, state and municipal statutes. The truth is that the Privacy Act of 1974 (federal statute) demonstrates that there is no specific law that covers the entire field of privacy regulation in USA. Consequently, the State of California alone has about 25 data security and privacy statutes, including the broad-spectrum CCPA.[73] The CCPA provides extensive definitions for individual rights as well as it enacts prohibitions, and thresholds for the access, disclosure, processing, and use as well as the retention of personal information of individuals in California. [74]

---

[70] Runshan Fu, Ginger Zhe Jin and Meng Liu, "Does Human-Algorithm Feedback Loop Lead to Error Propagation? Evidence from Zillows's Zestimate". *Cambridge, MA: National Bureau of Economic Research (*2022). https://doi.org/10.3386/W29880.

[71] Emmanuel Permot-Leplay, "China's Approach on Data Privacy Law: A Third Way between the US and the EU". *Penn State Journal of Law & International Affairs* 8 (2020): 55 – 62.

[72] The Financial Services Modernization Act 1999 is also known as the GrammLeach Bliley Act (GBLB).

[73] The CCPA 2018 took effect on January 1, 2020. It is the pilot statute for States on Consumer Protection in US.

[74] Darren J. Abernethy and Gretchen A. Ramos, "The Revised and New CCPA Regulations Set to Take Effect on Jan. 1, 2026 – Summary of Near – Term Actions Items". *National Law Review* XV, no. 293 (2025). https://natlawreview.com/article/revised-and-new-ccpa-regulations-set-take-effect-jan-1-2026-summary-near-term.

JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

The decentralised nature of the data privacy laws of the USA is characteristic of its federal political structure which allows states to make complementary laws without prejudice to the doctrine of covering the fields. The regulators in the circumstances may intervene to curb dynamic pricing and price differentiation which have become unfair, deceptive and anti-competitive. The free market economy in the USA, which aligns with the EU single-market approach, conceives individual users of online marketplace as traders of their private goods and services requiring the regulators to keep a distance to allow transactional autonomy.[75] Notwithstanding the diverse state laws, there still exists price gorging situations which raise doubts on the potency of the laws to deal with algorithmic price outcomes owing to the fact that the laws pre-date the evolution of smart technology. Predatory pricing schemes are dealt with under the Sherman's Act, and such legislations for general trade regulation. [76] Although section 5, Trade Act has not identified data security and privacy with particularity, it has been the juridical basis for the sustained relevance of FTC through the century.[77] The section expressly proscribes and declares unfair competition techniques, which impact commerce, as unlawful. It could be fairly argued that unfair competition techniques implied by the Trade Act may not be defined without reference to decided cases on Sherman's rule of reason which resonates with methods that unreasonably restrain commerce, without more. [78] It follows that where the operations of pricing algorithms have reasonably restrained commercial autonomy, section 5 of the FTC may be activated by regulatory agencies.

Other statutes bearing on online algorithmic pricing, particularly in respect of data usage, include the Equal Credit Opportunity Act (ECOA) which operates under the supervision of the Federal Trade Commission. The ECOA proscribes discrimination for credit sales rationalised on age, colour,

[75] Ruben de Bruin, "A Comparative Analysis of the EU and US and Data Privacy Regimes and the Potential for Convergence". *Hastings Sci. & Tech L. J.* (2022): 130. https://www.ssrn.com/abstract=4251540.

[76] The Sherman's Antitrust Act 1890. See also, Robinson-Patman Act of 1936; and the Federal Trade Commission Act of 1914 (Trade Act).

[77] Lina M. Khan, "Section 5 in Action: Reinvigorating the FTC Act and the Rule of Law". *J. ANTITRUST ENF* 11, no. 149 (2023). https://scholarship.law.colunbia.edu/faculty_scholarship/3961.

[78] *American Tobacco Co. v United States*, 328 U. S. 781; 66 S. Ct. 1125 [1946].

JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

origin, race, religion, marital status or sexual orientation. [79] The FTC may proceed against firms engaged in deceptive or unfair dealings under the guise of online algorithmic pricing.[80] The Finance Services Modernization Act of 1999 (FSMP) impacts algorithmic pricing by restricting the scope of user's data accessible by algorithmic pricing devices from financial institutions.[81] Section 502 of the FSMA guarantees financial data protection to consumers by empowering them to decline any demand for divulging their personal information to third parties.

The USA has made significant inroads into law enforcement for the purpose of curbing algorithmic collusion, resulting in sustained exploitation of consumers. The Sherman Antitrust law criminalises explicit collusion, which is construed to include internet commerce. In *Topkins* case,[82] the commercial retailer colluded with two executives, using algorithmic pricing device to arrange prices on Amazon marketplace. The collusion eliminated price competition among the sellers, resulting in excessive price listing for wall paper. Upon conviction in accordance with the Sherman's Act, Topkins paid penalty of $20,000, Daniel Aston, a controlling shareholder in Trod Limited was sentenced to a jail term while, Trod Limited as a corporate entity received a sentence of $50,000 with a commitment to retain a compliance monitor.[83] Private users have filed a number of suits challenging algorithmic pricing, contending that the software is deployed by competitors in a manner of "hub and spoke" conspiracy for the purpose of establishing extortionist prices. In *Gibson v MGN Results International*,[84] it was successfully contended for the plaintiff that prominent Las Vegas Strip hotel casino engaged in price-fixing and facilitated 'algorithm-driven-price-fixing by accessing competitors' pricing data for the purpose of providing unlawful room-rate schedules for hotel operators' profit maximisation. As recent as November 2023, the Attorney-General for the District of Columbia initiated proceedings against 14

[79] Ugochukwu G. Ehirim, "Public Morality and Constitutionalism in Restricting LGBTQ+ Rights: A Legal Analysis of Nigeria, Ghana, and Uganda", *International Journal of Constitutional and Administrative Law* X, no. Y, ABCD (2025): 42-68.

[80] Section 5 of the Federal Trade Commission Act (FTC Act).

[81] Section 501 of the FSMA 1999.

[82] *United States v Topkins*, 3:15-Cr-000201-WHO (N.D. Cal.) [2015].

[83] Salil K. Mehra, "US v Topkins: Can Price Fixing Be Based on Algorithms?" *Journal of European Competition Law & Practice* 7, no. 7 (2016): 470-74. https://doi.org/10.1093/jeclap/lpw053.

[84] *Gibson v MGM Resort Int'L*, 2:23-CV-00140-MMD-DJA [2023].

JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

most notable landlords transacting with the RealPage centralised pricing algorithm to cause artificial inflation of house rent prices.[85]

Europe and Britain align with the USA's approach against the negative operations of pricing algorithms within the framework of extant laws on competition. [86] This is demonstrated by a community reading of Art. 6 of the EU Directives, particularly the UCPD.[87] Under the 'full harmonisation doctrine' within community Europe, the UCPD prohibits States Parties from implementing measures adjudged stricter than the framework established by the Directive, for whatever purposes, except as may be permitted in the Directive itself. The truth is that all unfair trade practices, including algorithmic pricing, are proscribed and made subject to transparency thresholds.[88] In 2018, Asus, Philips, Pioneer and Denon & Marante which are electronics manufacturing giants established websites for price comparison with inbuilt tools to monitor retailers and compel them to sell at regulated prices, particularly in France and Germany.[89] The European Commission found that Asus Computer/GmbH and Asus France SARL, by the singular act, contravened the law. [90] Prohibitive fines were consequently imposed on Asus as prescribed in Article 23(2)(a) of the Regulation.[91] Generally, the Digital Services Act (DSA), and the Digital Market Act (DMA) became enforceable within community Europe in May 2024 and February 2023 respectively.[92] The DMA mandates gatekeepers to submit updated data on consumer profiling mechanisms to the Commission. This enables the regulator to assess the level of gate-keepers' compliance with best practices on their various platforms. Under the digital services package, users have the options to withdraw from algorithmically influenced prices within two weeks of the transaction. Such withdrawal could be for any reasons, including extortionist prices and objection to unauthorised use of private data. Under the DSA, online pricing

[85] District of Columbia v RealPage Inc. & Ors, No. 2023 – CAB-006762(D.C Super July 2, 2024) [2024].

[86] European Union, 'Algorithms and Collusion – Note from the European Union". 2017. https://one.oecd.org/doucment/DAF/COMP/WD(2017)12/en/pdf.

[87] Unfair Commercial Practices Directive (Directive 2005/29/EC - UCPD), Art. 6 (d).

[88] Art. 6 & 7 of the UCPD.

[89] European Union (Case AT.40465 – ASUS:C (2018)4773 (Final).

[90] Article 101, Treaty on the Functioning of the European Union (TFEU).

[91] The Laws are jointly referred to as Digital Services Package. The DSA targets the notably large online search engines and platforms. Both laws were proposed by European Commission in December 2020.

[92] See also, EU Omnibus Directive implementing the EU's "New Deal for Consumers". 2020.

JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

platforms are obligated to expressly disclose the parameters utilised in the recommender devices in the terms and conditions column, for informed guidance of users.

The Digital Market Competition and Consumers Act 2024 (DMCCA) brings up to speed, all legal developments in force in the UK on 3rd May 2025, respecting consumer rights within the e-commerce landscape.[93] The DMCCA gives the Competition and Markets Authority (CMA) extensive vires on consumer safeguards, which powers cover practices enabling anti-competitiveness in practice and effect, having UK nexus threshold.[94] The introduction of digital market regime brings the big-tech under the regulatory powers of the CMA. It is posited that online pricing algorithms comfortably fit into the regulatory boundaries of the CMA as they fall into digital activities captured under the law.[95]

China's regulatory infrastructure on AI and online pricing algorithms is influenced by the country's quest for supremacy over the USA in smart technology. China's flagship authority for regulation of digital commerce resides with the Regulations of the Administration of Internet Information Services which became enforceable in March 2022. Hao identifies the salient point of the Regulation as the statutory vires accorded regulators to compel the opening-up of the algorithms' 'black box' to the public through the agency in charge of the administration of cyberspace in China (CAC).[96] The evolving regulatory network in China targets undesirable algorithmic outcomes in order to limit corporate data-siloing and encourage state use of platforms for economic and political ends. It is less focused on enhancing individual consumer rights or digital privacy rights, unlike the GDPR and the Sherman's Act.

The definition of online or internet platform is the gateway to the major differences in the China and Europe's approach towards regulation of pricing algorithms. Article 2.1 of China's Anti-monopoly Guidelines interprets internet platform as a form of business establishment which provides bilateral and multilateral interaction platform for the purpose of mutual value creation

[93] Digital Markets, Competition and Consumer Act 2024 (Commencement No. 2) Regulations 2025 which came into force on 6 April 2025 (Spring). Consumer protections with regards to smart contracts commences enforcement in 2026 (Spring).

[94] Section 1(1), (2) and (4) of the DMCCA [UK].

[95] Section 3(1) of the DMCCA [UK].

[96] Karen Hao, "China May Be Chasing Impossible Dream by Trying to Harness Internet Algorithms." *Wall Street Journal* (30 August, 2022).

JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

whereas, the EU Parliament construed online (internet) platform as a hosting medium which retains and distributes information to the public at the promptings of the recipient. However, a community reading of the laws of Europe, particularly the DSA and the DMA[97] demonstrates alignment to deliver a comprehensive approach to platform accountability and consumer protection. Another comparative advantage of the China e-commerce law over the ECD is the strict monitoring of internet transactions to ensure consumer protection and statutory governance across board, unlike the classification based on the level of digitalisation and transaction in the case of ECD. [98] A single, streamlined regulatory framework would be more apposite for Europe for greater access and applicability in the circumstances of internet powered violations of consumer rights. [99]The China Regulation has, however, been used to bar algorithmic price discrimination by granting users the option to decline. This practice aligns with the ECD's right to rescind. It is, therefore, illegal to manipulate information using algorithmic technology for the purpose of exploitation or monopoly in the online marketplace in accordance with the Chinese laws.[100] The Anti-Monopoly Law of China by its Article 3 provision applies to regulate algorithmic price differentiation in cases where the controller of the algorithms has established a dominant market status. Consequently, the law intervenes where the controller issues discriminatory prices or decisions lacking in reasonable grounds or rotationality. The law has been successfully applied to stop Alibaba and other members of the Chinese big-tech from exhibiting monopoly and abusing dominance in the Chinese digital economy.[101]

Algorithmic pricing is evolving at the same speed with other smart technologies generally in Nigeria, though with the knowledge of its operations

[97] See, Article 3 (i), DSA; Artiles 5 – 7 of the DMA which became applicable on 2 May 2023.

[98] Mihaela Tofan and Ionel Bostan, "Some Implications of the Development of E-Commerce on EU Tax Regulations." *Laws* 11, no. 1 (2022): 13. https://doi.org/10.3390/laws11010013.

[99] See, Sankul Kabra and Saira Gori, "Combating Cryptocurrency Laundering by Organised Crime Groups through an Effective Regulatory Framework." *IIUM Law Journal* 33, no. 1 (2025). https://doi.org/10.31436/iiumlj.v33i1.1007.

[100] Jing Xu, "Opening the 'Black Box' of Algorithms: Regulation of Algorithms in China." *Communication Research and Practice* 10, no. 3 (2024): 288-296. https://doi.org/10.1080/22041451.2024.2346415.

[101] Sandra Marco Colino, "The Case against Alibaba in China and its Wider Policy Repercussions". *Journal of Antitrust Enforcement* 10, no. 1 (2022): 217-229. https://doi.org/10.1093/jaenfo/jnab022.

JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

limited within the elite circle. In 2019, Jumia, a foremost e-business platform (besides *Uber)* was alleged of engaging pricing algorithms for differentiated prices of commodities at its Black Friday trading show. Sahad Stores, a notable retail store outlet in Abuja recently in 2024 introduced algorithmic pricing techniques for profiteering. Fintech platforms such as Palm Credit, Migo and Fairmoney have been identified as using algorithmic pricing technologies, which utilise unlawfully mined private data of individuals, to determine potential credit risks and establish differentiated lending conditionalities.[102] Given that Nigeria has no blueprint on AI governance, the principal statute regulating data access and utilisation in Nigeria is the NDPA 2023. Since the operations of pricing algorithms depend on availability of data, the statutory data regulation flagship has been extended to checkmate data abuses by big data companies engaged much more in consumer exploitations. The judiciary has been applauded in this respect for interpreting the principles of law to align data sanctity to constitutionally guaranteed rights to exist without unauthorised intrusion. Section 37 of the Nigerian Constitution (CFRN) enshrines the basic freedom of privacy, making it enforceable against abusive firms, corporate individuals and the state.[103] Thus, in *ITDRLI v I. T. S & M Ltd,*[104] the court determined that individuals' private information is protected under the privacy provision in the CFRN. Consequently, the courts have reiterated the obligation on data controllers to abide by the prescriptions in the regulations established under the NDPA in 2019 (Rules) for the protection of citizens' rights.[105] The Constitution and the NDPA collaborate with the Federal Competition and Consumer Protection Act (FCCPA) 2019 for the protection of users and enhancement of fair competition within the online market spaces with Nigerian nexus. Sections 89 and 90 of the FCCPA proscribe bid-rigging, price-fixing and sundry conducts that endanger free competition in the market economy.[106] The Act governs every commercial transaction engaged-into for profit making and satisfaction of the participating public within Nigeria. The

[102] Ugochukwu G. Ehirim, "Regulating the Emerging Mobile Money Services and National Digital Currencies in Nigeria and South Africa". *Masaryk University Journal of Law and Technology* 20, no. 1 (2026). https://doi.org/10.5817/2025-40380.

[103] Ikenga K. E. Oraegbunam and Tega Edema, "Examining the Judicial Attitude to Data Protection in Nigeria." *Law and Social Justice Review* 4, no. 3 (2023): 5.

[104] *Incorporated Trustees of Digital Rights Lawyers Initiative v I. T. Solutions & Multi-media Ltd*, Suit No: HCT/262/2020

[105] *Incorporated Trustees of DRLI v Minister of Industry, Trade and Investment*, Unreported Suit No. FHC/AWK/CS/116/2020.

[106] Federal Competition and Consumer Protection Act, No. 1 of 2019.

JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

Watchdog of Nigeria information protection policy is the National Information Technology Development Agency (NITDA) which formulated the Rules. NITDA, like the FTC in the US, has the authority to police pricing algorithms and prevent unfair trade techniques in the absence of a specific legislation for AI governance in Nigeria.[107]

G. Algorithmic Harms: Suggested Legal Reforms

To mitigate incidents of consumer dilemma in online market spaces, policymakers should expand access to information to reduce the effect of behavioural prejudices. This underscores the fact that the increasing popularity of algorithms bequeaths new threats to consumer protection. Furthermore, legislators may engage antitrust laws to weaken market powers as well as widen the citizens' privacy domain.

Another step in the reduction of algorithmic harm on consumers is the elevation of the right to algorithmic transparency to a global standard. The USA holds lenders to account by requiring reasonable level of disclosure within the Fair Credit Reporting Act of 1970, particularly of factors that injure a consumer's credit score. The GDPR prescribes entitlement to explanation. It is contended that such exposure to 'sunlight' could validly disinfect the infested black-box and scale-down the overall harmful impact of algorithmic pricing. This would fortify the consumer with the requisite knowledge to withdraw or continue with transactions powered by pricing algorithms. The extant regulatory approaches maintain an unbalanced scale in favour of technological applications at the disposal of the seller against those within consumers' reach. Regulatory policy should strike an equilibrium by fortifying the digital tools accessible to consumers, the civil society and the general public.

Finally, there should be intentional efforts by the regulators to get more involved in the design and engagement of pricing algorithms. This could implicate mandatory non-discrimination constraint which should be inbuilt in the computer device-code or an outright ban of such harmful devices in most vulnerable market spaces. To effectively implement the foregoing suggestion, the regulator should engage monitoring algorithms for the purpose of policing the sellers' algorithms. The judiciary or administrative tribunals should be

[107] Andrew D. Selbst and Solon Borocas, "Unfair Artificial Intelligence: How FTC Intervention can Overcome the limitations of Discrimination Law". *U. PENN. L. Rev.* 171 (2023).

JURISTA: Jurnal Hukum Keadilan
Vol.10, No.1, June 2026
P-ISSN: 2502-8006 E-ISSN: 2549-8274
DOI: http://www.doi.org/10.22373/jurista.v10i1.378

proactive in holding sellers accountable under a principle of liability, particularly in cases where a consumer is offered excessive price or inferior products. To this end, courts should hold that subtle manipulations targeting emotional traits or attitudinal prejudices for sales maximisation are unfair commercial practices. The Court should clarify the extant rules in such a manner as to leave the impermissible behavioural categories beyond doubt.

CONCLUSION

Pricing algorithms have come to stay. Their indispensability in driving digital economy is manifest in the growing patronage which they record across jurisdictions. Their impacts are visible wherever internet data is accessible. The phenomenon justifies regulatory frameworks to address information privacy of users as well as transparency and fairness in the entire commercial process. The consumer has a right to transact with his or her rights to privacy and freedom from discrimination intact as much as a seller is in business to maximise profit. This research has explored the legal uncertainties affecting consumers' protection at a time when complex legal regimes strife to hold algorithms accountable for their roles in commercial activities. The law should establish itself as a currency of trust through regulatory measures. Regulatory mechanisms, therefore, must strike this balance of equity. The EU E-commerce Directive which has been improved by the DSA and DMA, as well as the USA Sherman's Act are global models ensuring consumers' right security in e – commerce. With the EU gravitating towards a single-market structure, the advantages of unified legal regime for consumer protection would impact other jurisdictions outside Europe. The myriad of instruments regulating consumer protection, particularly with respect to online transactions need to be synchronised to make them accessible with ease, even to the most uninformed consumer. The UK's recent DMCC Act is commendable and should be coveted for its attempt to codify all laws in the country which impact e-commerce and online transactions generally. It has improved on existing regulations aimed at holding big data firms accountable.

Accountability is key to legal enforcement. To this end, China's bold step to open up the black box is commendably different and only reinforces the clamour for transparency. The need to bring black box under scrutiny strengthens the case for policing algorithms and the liberalisation of monitor-tools to enable users and the civil society to track the evolving algorithmic pricing patterns that are detrimental to consumers' interests, and in breach of

extent laws. This is because, despite the utility of pricing algorithms, constitutional rights of individual citizens must be prioritised without hindering economic activities. Individual rights and economic activities must co-exist!

The relevant UK and Nigerian Laws on the subject matter are yet to be tested, given their recency. There is, therefore, a need to subject and transform these laws-in-the-books into laws-in-action to gain a clearer understanding of how much protection (from exploitation) the law truly affords consumers within the named jurisdictions. The evolving assault on consumers' rights occurs within the metaverse, the global commons of transactional commerce. This highlights the importance of a working synergy among regulators across jurisdictions for effective monitoring and enforcement of sanctions against defaulters, and to ensure there is no escape route for violations of consumer protection. For example, the classical case of *Asus GmbH* was made much easier because both France and Germany subscribe to the EU regulatory authority and collaborated in the justice project. Effective collaboration is important as cyberspace is without marked geographical or political boundaries, and digital governance by sovereign states is but for administrative exigency.

REFERENCES

Abernethy, Darren J., & Ramos, Gretchen A. "The Revised and New CCPA Regulations Set to Take Effect on Jan. 1, 2026 – Summary of Near – Term Actions Items". *National Law Review* XV, no. 293 (2025). https://natlawreview.com/article/revised-and-new-ccpa-regulations-set-take-effect-jan-1-2026-summary-near-term.

Aloamaka, Patrick Chukwunonso. "A Critical Analysis of the Nigeria Data Protection Act 2023: Elevating Standards to Global Norms". *UCC Law Journal* 4, no. 2 (2025): 242-263. https://doi.org/10.47963/ucclj.4:2:1724.

Assad, Stephanie., Clerk, Robert., Ershov, Daniel and Xu, Lei. "Algorithmic Pricing and Competition: Empirical Evidence from German Retail Gasoline Market". *The Journal of Political Economy* (2024). https://doi.org/10.1086/726906.

Bar-Gill, Oren. "Consumer Misconceptions in a Hoteling Model: with and without Price Discrimination". *J. INST & THEORETICAL ECON*. 176 (2020): 180.

Bar-Gill, Oren, Sunstein, Cass R. and Talgam-Cohen, Inbal. "Algorithmic Ham in Consumer Markets". *The Harvard John M. Olim Discussion Paper Series* 01 (2023). https://www.law.havard.edu/programs/olincenter.

Botta, Marco and Wiedemann, Klaus. "To Discriminate or Not to Discriminate? Personalised Pricing in Online Markets as Exploitative Abuse of Dominance." *European Journal of Law & Economics* 50 (2020): 386 - 388.

Brown, Zach Y. and Mackay, Alexander. "Competition in Pricing Algorithms". *American Economic Journal: Microeconomics* 15, no. 2 (2023): 109 - 156. https://doi.org/10.1257/mic.202110158.

Bruin, Ruben de. "A Comparative Analysis of the EU and US and Data Privacy Regimes and the Potential for Convergence". *Hastings Sci. & Tech L. J.* (2022): 130. https://www.ssrn.com/abstract=4251540.

Brunsden, Jim and Robinson, Des. "Disneyland Paris Ditches Pricing Policy." *Financial Times* (2016). https://www.ft.com/content/e472ee c2-031b-11e6-af1d-c47326021344.

Calder-Wang, Sophie and Kim, Gi Heung. "Coordinated vs Efficient, Prices: The Impact of Algorithmic Pricing on Multifamily Rental Markets". *SSRN Electronic Journal Advance online Publication* (2023). https://doi.org/10.2139/ssrn.4403058.

Coker, Jerod and Izaret, Jean-Manuel. "Progressive Pricing: The Ethical Case for Price Personalization". *Journal of Business Ethics* 173 (2021): 387.

Colino, Sandra Marco. "The Case against Alibaba in China and its Wider Policy Repercussions". *Journal of Antitrust Enforcement* 10, no. 1 (2022): 217-229. https://doi.org/10.1093/jaenfo/jnab022.

Crane, Emily. "Uber, Lyft Ripped for Surging NYC Prices during Storm, Flooding 'Shine Balls'". *New York Post* (29 September, 2023). https://nypost.com/2023/09/29/New-Yorkers-rip-uber-lyft-for-surging-prices-during-storm/.

Dastin, Jeffrey. "Amazon Scraps Secret AI Recruiting Tool that showed Bias against Women". *REUTERS* (10 October, 2018). https://www.reuters.com/article/US-amazon-com-jobs-

automation-insight/amazonscraps-secret-ai-recruiting-tool-that-showed-bias-against-women-idUSKCN1MK08G.

Dube, Jean-Pierre and Misra, Sanjog. "Personalized Pricing and Consumer Welfare". *The Journal of Political Economy* 131, no. 1 (2023): 131-89. https://doi.org/10.1086/720793.

Ehirim, Ugochukwu G., "Public Morality and Constitutionalism in Restricting LGBTQ+ Rights: A Legal Analysis of Nigeria, Ghana, and Uganda". *International Journal of Constitutional and Administrative Law* X, no. Y, ABCD (2025): 42-68

Ehirim, Ugochukwu G., "Regulating the Emerging Mobile Money Services and National Digital Currencies in Nigeria and South Africa". *Masaryk University Journal of Law and Technology* 20, no. 1 (2026). https://doi.org/10.5817/2025-40380

Esposito, Fabrizio. "The GDPR Enshrines the Right to the Impersonal Price." *Computer Law & Security Review* 45 (2022): 105660.

European Union, "Algorithms and Collusion – Note from the European Union".
2017. https://one.oecd.org/doucment/DAF/COMP/WD(2017)12/en/pdf.

Ezrachi, Ariel and Stucke, Maurice. E. "Artificial Intelligence & Collusion: When Computers Inhibit Competition". *University of Illinois Law Review* 32 (2017):1775, 1795.

Fish, Sara., Gonczarowski, Yannai. A. and Shorrer, Ran I., "Algorithmic Collusion by Large Language Models". *arXiv* (2024). https://doi.org/10.48550/arXiv.2024.00806.

Fu, Runshan., Jin, Ginger Zhe and Liu, Meng. "Does Human-Algorithm Feedback Loop Lead to Error Propagation? Evidence from Zillows's Zestimate". *Cambridge, MA: National Bureau of Economic Research* (2022). https://doi.org/10.3386/W29880.

Han, Wei., Gao, Yajie and Deng Ai. "Algorithmic Price Discrimination on online Platforms and Anti-trust Enforcement in China's Digital Economy". *The Anti-trust Source* 2017, no. 1 (2018): 5.

Ge, Jiangqiu. and Chen, Li. "The Obligation to Provide 'Non-Personalised Search Results under the Chinese E-commerce Law". *Computer Law & Security Review* 41, no. 2 (2021): 366-383.

Gerlick, Joshua A. and Liozu, Stephen M. "Ethical and Legal Considerations of Artificial Intelligence and Algorithmic Decision-making in

Personalized Pricing". *Journal of Revenue and Pricing Management* 19, no. 85 (2020). https://doi.org/10.1057/S41272-019-00225-2.

Gillis, Talia B. "The Input Fallacy". *Minn. L. Rev* 106 (2022): 1184. https://ssrn.com/abstract=3571266.

Grochuwski, Mateusz., Jablonowska, Agnieszka., Lagioia, Francesca. and Sartor, Givanni. "Algorithmic Price Discrimination and Consumer Protection: A Digital Arms Race". *Technology and Regulation* (2022): 36-47. https://doi.org/10.71265/kd9w2w17.

Hao, Karen. "China May Be Chasing Impossible Dream by Trying to Harness Internet Algorithms." *Wall Street Journal* (30 August, 2022).

Ivanova, Yordanka. "The Data Protection Impact Assessment as a Tool to Enforce Non-Discriminatory AI". *Privacy Technologies and Policy* (2020). https://ink.springer.com/10.1007/978-3-030-55196-4_1.

Khan, Lina M., "Section 5 in Action: Reinvigorating the FTC Act and the Rule of Law". *J. ANTITRUST ENF* 11, no. 149 (2023). https://scholarship.law.colunbia.edu/faculty_scholarship/3961.

Johnson, Justin P., Rhodes, Andrew and Widenbeest, Matthijs. "Platform Design When Sellers Use Pricing Algorithms". *Econometrica* 91, no. 5 (2023): 1841-79. https://doi.org.10.3982/ECTA19978.

Kabra, Sankul and Gori, Saira. "Combating Cryptocurrency Laundering by Organised Crime Groups through an Effective Regulatory Framework." *IIUM Law Journal* 33, no. 1 (2025). https://doi.org/10.31436/iiumlj.v33i1.1007.

Li, Zihao. "Affinity-Based Algorithmic Pricing: A Dilemma for EU Data Protection Law". *Computer Law and Security Review* 46 (2022): 105705. https//doi.org/ 10.1016/j.clsr.2022.105705.

Li, Zihao. "Regulating Online Algorithmic Pricing: A Comparative Study of Privacy and Data Protection Laws in the Eu and US". *Transatlantic Technology Law Forum (TTLF) Working Papers* 114 (2024):14. http://ttlf.standford.edu.

Lippi, Marco., Palka, Przemyslaw., Contissa, Giuseppe., Lagioia, Francesca., Hans-Wolfgang, Micklitz., Sartor, Giovanni. and Torroni, Paolo. "CLAUDETTE: An Automated Detector of Potentially Unfair Clauses in Online Terms of Service." *Artificial Intelligence Law* 27 (2019): 117-139. https://doi.org/10.1007/s10506-019-09243-2.

Lippi, Marco., Contissa, Giuseppe., Jablonowska, Agnieszka., Lagioia, Francesca., Micklitz, Hans-Wolfgang., Palka, Przemyslaw., Sartor,

Giovanni. and Torroni, Paolo. "The Force Awakens" Artificial Intelligence for Consumer Law". *Journal of Artificial Intelligence Research* 67 (2020): 169. https://doi.org/10.1613/jair.1.11519.

Lu, Shijie., Yao, Dai., Chen, Xingyu. and Grewal, Rajdeep. "Do Larger Audiences Generate Greater Revenues under pay what you want? Evidence From a live Streaming Platform". *Marketing Science* 40, no. 5 (2021): 964-984. https://doi.org/10.1287/MKSC.2021.1292.

Luguri, Jamie and Strahlevitz, Lior Jacob. "Shining a Light on Dark Patterns". *Journal of Legal Analysis* 13, no. 1 (2021): 43-109. https://doi.org/10.1093/jla/laaa006.

Mackay, Alexander., Svartback, Dennis and Ekholm, Anders G. "Dynamic Pricing and Demand Volatility: Evidence from Restaurant Food Delivery". *SSRN Electronic Journal Advance Online Prohibition* (2022). https://doi.org/10.2139/SSRN.3979147.

Mann, Monique and Matzner, Tobias. "Challenging Algorithmic Profiling: The Limits of Data Protection and Anti-Discrimination in Responding to Emergent Discrimination". *Big Data and Society* 6 (2019). https://doi.org/10.1177/2053951719895805.

Martin, Nicole. "Uber Charges More if They Think You're Willing to Pay More." *Forbes* (2019). https://www.forbes.com/sites/micolemartin1/2019/03/30/uber-charges-more-if-they-think-youre-willing-to-pay-more/?sh=7f9256c57365.

Mehra, Salil K., "US v Topkins: Can Price Fixing Be Based on Algorithms?" *Journal of European Competition Law & Practice* 7, no. 7 (2016): 470-74. https://doi.org/10.1093/jeclap/lpw053.

Oraegbunam, Ikenga K. E. & Edema, Tega. "Examining the Judicial Attitude to Data Protection in Nigeria." *Law and Social Justice Review* 4, no. 3 (2023): 5.

Panek, Wojciech. "People's Republic of China and the Adequacy – Why Chinese Data Protection Law is Not Adequate within the Meaning of the GDPR". *Masaryk University Journal of Law and Technology* 18, no. 2 (2024): 143 – 167. https://journals.muni.cz/mujlt/article/view/37354/33339.

Permot-Leplay, Emmanuel. "China's Approach on Data Privacy Law: A Third Way between the US and the EU". *Penn State Journal of Law & International Affairs* 8 (2020): 55 – 62.

Poort, Joost and Borgesius, Frederick. J. Zuiderveen. *Personalized Pricing: The Demise of the Fixed Price? 'Data Driven Personalization in Markets, Politics and Law*. Cambridge University Press, 2021.

Porat, Haggai. "Bargaining with Algorithms: An Experiment on Algorithmic Price Discrimination and consumer and data protection laws". *JEL Classifications* L ll, no. K 12 (2024): 3.

Purova, Nadezhda. "The Law of Everything. Broad Concept of Personal Data and Future of EU Data Protection Law". *Law, Innovation and Technology* 10 (2018): 41-43. https://www.tandfonline.com/doi/full/10.1080/17579961.2018.1452176.

Reimers, Imke and Waldfogel, Joel. "Throwing the Books at Them: Amazon's Puzzling Long Run Pricing Strategy". *Southern Economic Journal* 83, no. 4 (2017): 869-885. https://doi.org/10.1002/soej.12205.

Saputra, Beny. "Hungary's AI Strategy: Lessons for Indonesia's AI Legal Framework Enhancement". *Jambe Law Journal* 7, no.1 (2024): 51. https://dci:org/10.22437/jly:7.1.25-58.

Sax, Marijn. Helboreger, Natali and Bol, Nadine. "Health as a means towards Profitable Ends: Health Apps, User Autonomy, and Unfair Commercial Practices". *Journal of Consumer Policy* 41 (2018): 109.

Selbst, Andrew D. and Borocas, Solon. "Unfair Artificial Intelligence: How FTC Intervention can Overcome the limitations of Discrimination Law". *U. PENN. L.Rev.* 171 (2023).

Spann, Martin. Bertini, Marco. Koenigsberg, Oded. and others. "Algorith**mic** Pricing: Implications for Consumers, Managers and Regulators". *National Bureau of Economic Research (NBER) Working Papers Series* 32540 (2024): 5. https://www.uber.org/papers/32540.

Steppe, Richard. "Online Price Discrimination and Personal Data: A General Data Protection Regulation Perspective". *Computer Law and Security Review* 33, no. 768 (2017). https://www.doi.org/10.1016/j.clsr.2017.05.008.

Tofan, Mihaela and Bostan, Ionel. "Some Implications of the Development of E-Commerce on EU Tax Regulations." *Laws* 11, no. 1 (2022): 13. https://doi.org/10.3390/laws11010013.

Townley, Christopher., Morrison, Eric and Yeung, Karen. "Big Data and Personalized Price Discrimination in EU Competition Law". *Yearbook of*

European Law 36, no. 683 (2017): 683-748. https://doi.org/10.1093/yel/yex015.

Ukwueze, Festus Okechukwu and Dike, Justin Ibegbulem. "Deconstructing Nigeria's Data Protection Regime from Consumer Protection perspective". *The Law, State and Telecommunication Review, Brasilia* 13, no. 1 (2021): 11. https://doi.org/10.26512/Istr.v13i1.31850.

Voigt, Paul and Bussche, Axel von dem. *The EU General Data Protection Regulation (GDPR): A Practical Guide*. Springer International Publishing, 2017.

Wong, Benjamin. "Online Personalized Pricing as Prohibitive Automated Decision-Making Under Article 22 GDPR: A Sceptical View". *Information & Communications Technology Law* 30, no. 193 (2021). https://doi.org/10.1080/13600834.2020.1860460.

Xu, S. Jing and Gao, Qiang. "Algorithmic Price Discrimination under the Framework of Anti-monopoly Law". *China Law Review* 3 (2022): 105-107.

Yang, Kai Hao. "Selling Consumer Data for profit: Optimal Market – segmentation Design and its consequences". *AM. ECON. REV*. 112 (2022): 1364 – 65.

Zeng, Rongxin and Li, Xiaoshan. "On the Illegality and Regulation of Algorithmic Price Discrimination in China's Digital Economy". *Journal of Politics and Law* 16, no. 4 (2023): 37. https://doi.org/10.5539/jpl.v16n4p36.

Zhao, Zeyu. "Algorithmic Personalized Pricing with the Right of Explanation." *Journal of Competition Law & Economics*. (2023). https://academic.oup.com/jcle/advance-article/doi/10.1093/joclec/nhad008/7259590.