

A WEB OF PARADOXES: EMPIRICAL EVIDENCE ON ONLINE PLATFORM USERS AND IMPLICATIONS FOR COMPETITION AND REGULATION IN DIGITAL MARKETS

PINAR AKMAN*

Abstract

This article presents and analyses the results of a large-scale empirical study in which over 11,000 consumers from ten countries in five continents were surveyed about their use, perceptions and understanding of online platform services. To the author’s knowledge, this is the first cross-continental empirical study on consumers of online platform services of its kind. Amongst others, the study probed platform users about their multi-homing and switching behaviour; engagement with defaults; perceptions of quality, choice, and well-being; attitudes towards targeted advertising; understanding of basic platform operations and business models; and, valuations of ‘free’ platform services. The empirical evidence from the consumer demand side of some of the most popular multi-sided platforms reveals a web of paradoxes that needs to be navigated by policymakers and legislatures to reach evidence-led solutions for better-functioning and more competitive digital markets. This article contributes to literature and policy by, first, providing a multitude of novel empirical findings and, second, analysing those findings and their policy implications, particularly regarding competition and regulation in digital markets. These contributions can inform policies, regulation, and enforcement choices in digital markets that involve services used daily by billions of consumers and are subjected to intense scrutiny, globally.

Abstract	1
I. Introduction	2
II. Survey Design and Methodology	6
III. Empirical Findings	10
a. Patterns of platform use, effects on well-being, and engagement with defaults	10
b. Platform users’ perceptions of quality and choice, and switching activity	16
c. Digital literacy and attitudes towards platform data collection practices and advertisements..	19

* Professor of Law and Director at Jean Monnet Centre of Excellence on Digital Governance, School of Law, University of Leeds. The author gratefully acknowledges support by the Leverhulme Trust, Philip Leverhulme Prize, which funded her research leave during which this study was conducted. She also gratefully acknowledges support by Research England, UK Research and Innovation (UKRI) which provided the funds for the survey through the QR Strategic Priorities Fund and support by the University of Leeds which competitively awarded her the funds. The survey underlying this research was approved by the relevant ethics committee at the University of Leeds (Ref. No. LTLLAW-043). The author has no involvement in any legal actions regarding technology companies and has no current or recent, direct or indirect engagement (employment, consultancy, institutional grants, etc.) with any technology company or with any interested third-party (economics consultancy, law firm, industry/trade association, etc.). No feedback was sought or received from any interested party on any aspect of the research project. In the past the author published an article commissioned by Google (Pinar Akman, ‘The Theory of Abuse in *Google Search*: A Positive and Normative Assessment under EU Competition Law’ [2017] (2) J. LAW, TECH.& POL’Y 301). The author would like to thank Laura Piggott, Jane Rowe and Gavin Ellison of YouGov for their valuable input, feedback and support in the creation and administration of the survey on which this article relies. The author would like to thank Peter Whelan and D. Daniel Sokol for feedback on the draft survey, as well as the respondents to her open call for suggestions on LinkedIn and Twitter. She is grateful to Peter Whelan, Or Brook, D. Daniel Sokol, Barak Orbach and Max Huffman for invaluable feedback and suggestions on an earlier draft of the article. All errors remain hers. The author can be contacted at p.akman@leeds.ac.uk.

d. Trustworthiness, and consumer perceptions of technology companies and the ‘big tech’	25
e. Value of ‘free’ platform services for consumers, and platform competition.....	28
IV. Analysis of the Insights from the Empirical Findings, and Implications and Recommendations	32
a. The Insights.....	33
b. The Implications and Recommendations.....	40
V. Conclusion	49

I. Introduction

This article presents and analyses the results of a large-scale, international empirical study in which over 11,000 consumers from ten countries in five continents were surveyed about a wide range of topics as users of online platform services. The aim of the empirical study was to collect data that can inform evidence-based policymaking and enforcement choices in digital markets, in particular concerning competition and regulation therein. To the author’s knowledge, this is the first cross-continental empirical study on users of online platform services of its kind. It is the first empirical study on online platform consumers of this scope, scale, focus and jurisdictional coverage regarding a wide range of the most popular platform services. Amongst others, the article provides new empirical findings on the reported use of online platform services by consumers including their multi-homing and switching behaviour; engagement with defaults; perceptions of ‘competition’; and understanding of and attitudes towards platform services and their providers, including the ‘big tech’. These empirical findings advance existing knowledge regarding online platform markets, the consumption of platform services by consumers and the features of the demand side that are relevant to the effectiveness of competition in these markets. In a nutshell, the empirical evidence gathered in this study on the consumer side of online platform markets presents a web of paradoxes and complexities that need to be navigated by policymakers and legislatures to reach evidence-led solutions for better-functioning digital markets. The article finds that contemporary policymaking considers to an insufficient extent some of the factual elements of the demand side, which engenders a risk of suboptimal policy choices in these markets through challengeable general assumptions and blind spots. Suboptimal policy choices in digital markets risk making these markets – which contain products and services used daily by billions of consumers and offered by some of the wealthiest corporations on the planet – no more, and even less, competitive than they currently are. The novel empirical findings, their analysis and the implications of these findings complemented by recommendations in this article can contribute to improved choices in the areas of competition (antitrust) law and policy, regulation, and enforcement in digital markets.

This study is timely and important as numerous jurisdictions around the world are scrutinising digital markets with a view to, *inter alia*, potentially amending existing competition laws and frameworks, and adopting new laws and regulations to tackle some of the challenges posed by these markets.¹ This has led to a flurry of publications and studies on

¹ For notable examples, *see e.g.*, Competition and Antitrust Law Enforcement Reform Act of 2021, 116th Congress, SIL21191 6C1, 4 Feb. 2021 (US); Eur. Comm’n, Proposal for a Regulation of the European Parliament and of the Council on contestable and fair markets in the digital sector (Digital Markets Act), COM(2020) 842 final, 15 Dec. 2020 (Eur. Union); Eur. Comm’n, Proposal for a Regulation of the European Parliament and of the Council on a Single Market for D

the optimal policy approach to digital markets regarding a multitude of issues observed in these markets. The issues range from fake news to addiction to hate speech to privacy to market concentration. The current piece is concerned primarily with the issues concerning competition, and competition law and regulation, although some of its empirical findings regarding how consumers engage with platform services and their levels of digital literacy can be informative for broader policy initiatives regarding digital markets.

The stakes involved in the debate over the role of competition law and policy and regulation in digital markets are high. The markets under scrutiny and the technology companies operating in these markets, including both start-ups and ‘tech giants’, are the source of much innovation and investment that generate numerous benefits to consumers and businesses around the world.² Several recent and ongoing high-profile enforcement proceedings by competition authorities around the world demonstrate both the importance of competition in digital markets and the numerous challenges of applying competition law in these markets.³ Despite the importance of the stakes involved, the magnitude of the ever-growing literature and policy proposals is not matched by the magnitude of empirical evidence on the markets under scrutiny. With some exceptions, most of which comprise studies focused on specific, national markets by a small number of competition authorities or regulators, the literature – including some publications that have been highly influential in steering policy – lacks robust, first-hand and systematic empirical evidence on the relevant markets, practices and market actors.⁴ Further, there is often no real discussion of the consumer demand side of

igital Services (Digital Services Act) and amending Directive 2000/21/EC, COM(2020) 825 final, 15 Dec. 2020 (Eur. Union); Gesetz zur Aenderung des Gesetzes gegen Wettbewerbsbeschaerakungen fuer ein fokussiertes, proaktives und digitales Wettbewerbsrecht 4.0 und anderer Bestimmungen (GWB-Digitalisierungsgesetz), 18 Jan. 2021 (‘Act Amending the Act against Restraints of Competition for a focused, proactive and digital competition law 4.0 and amending other competition law provisions’) (GWB-Digitalisation Act) (Germany); Act on Improving Transparency and Fairness of Digital Platforms, 27 May 2020 (Japan); Treasury Laws Amendment (News Media and Digital Platforms Mandatory Bargaining Code) Bill 2020, 15 Feb. 2021 (Australia). The reasons cited for *ex ante* regulation proposals include asymmetric market power between market players and between big tech incumbents and governments; Philip Marsden and Ruprecht Podzsun, *Restoring Balance to Digital Competition – Sensible Rules, Effective Enforcement* (Konrad-Adenauer Stiftung, 2020) 6, available at <https://www.kas.de/en/single-title/-/content/restoring-balance-to-digital-competition-sensible-rules-effective-enforcement>.

² For a summary of the range of benefits from the creation of new employment opportunities to access to global markets for Small and Medium Sized Enterprises (SMEs), see e.g., World Economic Forum, White Paper, *Competition Policy in a Globalized, Digitalized Economy*, 2019, available at <https://www.weforum.org/whitepapers/competition-policy-in-a-globalized-digitalized-economy>.

³ See e.g., Google Search (AdSense) (Eur. Comm’n Press Release, Antitrust: Comm’n fines Google €1.49 billion for abusive practices in online advertising (March 20, 2019)); Google Android (Comm’n Decision 1/2003 of July 18, 2018 relating to a proceeding under art. 102 of the Treaty on the Functioning of the European Union and art. 54 of the EEA Agreement (AT.40099 – Google Android) (EC)); Google Search (Shopping) (Comm’n Decision 1/2003 of June 27, 2017 relating to proceedings under art. 102 of the Treaty on the Functioning of the European Union and Article 54 of the Agreement on the European Economic Area (AT.39740 – Google Search (Shopping) (EC)).

⁴ See e.g., influential reports which have not gathered any first-hand systematic empirical evidence as this was not within their remit or scope, such as Jacques Crémer, Yves-Alexandre de Montjoye and Heike Schweitzer, *Competition Policy for the Digital Era*, Report prepared for Eur. Comm’n, Directorate-General for Competition, 2019; Jason Furman et al., *Unlocking Digital Competition: Report of the Digital Competition Expert Panel*, Report for UK Treasury, 2019; Stigler Center for the Study of the Economy and the State, *Report of the Committee for the Study of Digital Platforms: Market Structure and Antitrust Subcommittee*, 2019. On the lack of empirical evidence on online platforms due to the mainly theoretical and conceptual focus of the literature, see also Néstor Duch-Brown, *The Competitive Landscape of Online Platforms*, European Commission Joint Research Centre Technical Reports, JRC Digital Economy Working Paper 2017-04, available at <https://ec.europa.eu/jrc/sites/jrcsh/files/jrc106299.pdf>.

online platform markets with the primary focus of enforcers, policymakers and commentators placed on the business supply side of these markets, despite the fact that almost all of the scrutinised markets are consumer-facing markets.⁵ The dearth of attention to and empirical data on the consumer demand side is aggravated by the fact that most competition enforcers around the world arguably pursue ‘consumer welfare’ as the broad objective of competition law enforcement.⁶ The absence of a focus on gathering *systematic* empirical data on the consumer side – as opposed to, for example, evidence collected in the context of infringement proceedings – leads to a state of affairs where policies and enforcement choices can be influenced by assumptions and heuristics regarding consumer behaviour or preferences that are directly relevant to the effectiveness of competition in digital markets under scrutiny. Important examples of such market features include the multi-homing or switching behaviour of platform users, their perceptions of choice and quality, and consumer engagement with default settings when using platform services. The absence of systematic empirical data on the consumers of platform services can also lead commentators including policymakers and enforcers to overlook potential blind spots of market features, such as consumer digital literacy levels and paradoxical consumption preferences. Misplaced assumptions and blind spots can lead to misguided analyses which can, in turn, engender ineffective remedies and regulatory solutions insofar as the *actual* behavioural or cognitive states of platform users are, systematically, not as assumed or are overlooked.

Against this background, this article focuses specifically on the consumer demand side of online platforms.⁷ There are several reasons that justify and require this focus. First, the online platforms that have occupied policymakers and enforcers in recent years the most are

⁵ See e.g., the US House of Representatives, Subcommittee on Antitrust, Commercial and Administrative Law of the Committee on the Judiciary, Majority Staff Report and Recommendations, *Investigation of Competition in Digital Markets*, 2020 which, under the section on ‘Effects on Platform Market Power’ includes sub-sections on ‘Innovation and Entrepreneurship’, ‘Privacy and Data Protection’, ‘The Free and Diverse Press’, and ‘Political and Economic Liberty’ with no particular sub-section on issues arising specifically in relation to consumers on the demand side. There is similarly no real discussion of the benefits that online platforms have delivered for consumers in the US House Majority Report. To an extent, the lack of concern with the consumer side can be a reflection of the calls in the US to move away from a ‘consumer welfare’ standard as the guiding principle of antitrust enforcement as the consumer welfare standard is blamed for the under-enforcement of US antitrust laws; see e.g., Lina Khan, *The New Brandeis Movement: America’s Antimonopoly Debate*, 9 (3) J. EUR. COMPETITION LAW & PRAC. 131, 132 (2018). On the lack of attention to the consumer side of platforms due to the focus on the effects of platform conduct on business users, see also Eur. Comm’n Expert Group for the Observatory on the Online Platform Economy, Final Report, *Uncovering blindspots in the policy debate on platform power*, 2021, 3, available at <https://platformobservatory.eu/app/uploads/2021/03/05Platformpower.pdf>. For exceptions to this lack of attention to the consumer side, see e.g., Amelia Fletcher and David Hansen, *The Role of Demand Side Remedies in Resolving Competition Concerns*, in REMEDIES IN EU COMPETITION LAW: SUBSTANCE, PROCESS AND POLICY 17 (Damien Gerard and Assimakis Komninou eds., 2020).

⁶ See e.g. an International Competition Network (ICN) survey which found that the majority of competition authorities surveyed share a common desire to promote ‘consumer welfare’, despite the absence of agreement on a formal definition of the standard; ICN, *Competition Enforcement and Consumer Welfare Setting the Agenda*, 2011, 7, available at <https://eulawenforcement.com/wp-content/uploads/2019/01/Competition-Enforcement-and-Consumer-Welfare-Setting-the-Agenda.pdf?x81923>. See also e.g., Eur. Comm’n, Guidance on the Commission’s Enforcement Priorities in Applying Article 82 of the EC Treaty to Abusive Exclusionary Conduct by Dominant Undertakings, 2009 O.J. (C 45) 7, ¶¶ 5; 11.

⁷ In the context of multi-sided businesses such as online platforms, the distinction between the ‘supply’ side and the ‘demand’ side of a market is not so meaningful precisely because the business is multi-sided and it caters to demand from different sides, be that the demand from consumers or the demand from other businesses. This is why this article refers to the ‘consumer demand side’ to distinguish that from the demand side of platforms where the platform caters to demand from other businesses, namely business users of the platform (which can be deemed similar to the upstream ‘supply’ side in a business model that is not multi-sided).

‘multi-sided’ platforms which ‘match’ the consumers on one side with business users on the other side(s) of the market to facilitate an exchange of value.⁸ These include platforms offering services such as search engines, social/professional networks, communications/messaging, online marketplaces, online bookings, etc.⁹ Second, effective competition in any market requires sufficient numbers of consumers making sufficiently-informed choices that drive the suppliers on the market to strive to outcompete each other for the consumers’ custom. This is the essence of market competition, which generates the incentive for businesses to outperform their competitors by offering better services, better prices, better quality, more choice, more innovation, and so on. Thus, the consumers of platform services and their behaviour, preferences, choices, levels of knowledge and attitudes are integral to competition in consumer-facing digital markets. Subsequently, the features of the demand side must be part of the debate on any competition or regulatory policy choices. Third, evidence from the consumer side of platforms is necessary to ensure that the remedies adopted to alleviate competition law violations or regulatory solutions introduced to produce effective competition are of the right type and nature.¹⁰ In consumer-facing markets, remedies and regulatory solutions can only be effective to the extent that the market analyses from which they follow incorporate the realities of the consumer demand side. This applies particularly to remedies and regulatory solutions that rely on informed consumer engagement such as choice screens for default options, data portability, and so on. Fourth, empirical evidence on the consumer side can be utilised to prioritise the use of limited societal resources of enforcers and policymakers in areas where there are unlikely to be market-driven solutions given the state of consumer behaviour, understanding, attitudes or engagement with the platform services. Finally, empirical evidence from the demand side can contribute to a better understanding of market conditions and competition on the *supply* (i.e. business user) side of platform markets where the platform provides a service to business users (in competition with other platforms) to, for example, ‘match’ them with interested consumers. Gathering systematic empirical evidence on the supply side requires the full investigatory powers of a public authority that goes beyond the limits of academic research because it involves collecting evidence on prices, entry barriers, costs of operation, market shares, etc. Nevertheless, the results of the empirical study focused on the consumer *demand* side and the findings of this article can complement and inform such studies on the supply side of digital markets.¹¹

Given this context, this article has two objectives. First, it aims to fill some of the empirical evidence gap in the literature by presenting and analysing the results of the first large-scale, cross-continental survey of consumers on different aspects of their use and understanding

⁸ See, in general, DAVID S. EVANS & RICHARD SCHMALENSEE, *MATCHMAKERS: THE NEW ECONOMICS OF MULTISIDED PLATFORMS* (2016).

⁹ See e.g., EU DMA, *supra* note 1, specifically focusing on a limited number of ‘core services’ in the context of regulating the practices of ‘gatekeeper’ platforms. The core services covered in the DMA are online intermediation services (e.g. online marketplaces), online search engines, video sharing platform services, number-independent electronic communications services, operating systems, cloud services, advertising services; see, *id.* Art. 2.

¹⁰ On the complexities involved in finding the effective remedies in digital markets for competition law violations and for proposals on how to achieve effectiveness, see Michal S. Gal and Nicolas Petit, *Radical Restorative Remedies for Digital Markets*, 37 (1) BERKELEY TECH. L. J. (2021) (forthcoming).

¹¹ What remains possible on the supply side, however, is the ability to ask businesses – in the same manner in which one asks consumers – about their use of and relationships with online platforms and platform providers. The current author has, indeed, carried out such a survey of around 2,000 business representatives from nine different countries (UK, US, Germany, France, Italy, China, Singapore, Australia, India) with a view to collecting data on the supply side of platform markets alongside the consumer survey. The results of the business survey are currently on file with the author and will be published separately.

of online platform services, their preferences and choices, as well as their attitudes towards these platforms and their operators. Second, the article aims to analyse the policy implications of the empirical findings and make recommendations to contribute to improved policy choices in digital markets. This is done with a particular focus on competition and regulation in online platform markets, but given the wide-ranging nature of the empirical findings, some of the insights can also contribute to improvements in other policy areas relating to consumer-facing digital markets such as consumer protection and data protection.

To achieve these aims, this article is structured as follows. Section II explains the survey design and methodology underlying the empirical study. Section III presents the empirical findings in five sub-sections. First, the findings on the patterns of platform use, the extent of multi-homing, and the self-assessed effects of platform use on consumers' well-being and quality of life are reported. This sub-section also reports on the incidence of consumer engagement with different default settings on their devices and default settings of online platforms. Second, consumers' perceptions of the quality of platform products/services and the level of choice which they experience, and their switching activity are reported. Third, the findings on consumer digital literacy levels including comprehension levels of basic platform services, in particular of 'free' platform services, as well as on consumer attitudes towards personalised, targeted advertising and the data collection practices of platforms are presented. Fourth, the perceived trustworthiness of various institutions, including technology companies, and consumers' attitudes towards the 'big tech' companies are documented. Fifth, the results of a thought experiment that explored the value of widely-used 'free' platform services for consumers and the difference between consumers' willingness to pay for these services and their willingness to accept payment to forgo these services are presented. These results shed light on how much some 'free' of charge platform services may be 'worth' to users. This sub-section also contains findings on platform competition as perceived by platform users through an exploration of which platforms consumers consider as offering substitute products/services in competition with one another. Section IV analyses the implications of the empirical findings presented in Section III for competition and regulatory policy and enforcement choices in digital markets. It does so in two sub-sections. First, it establishes the main sets of insights arising out of the empirical study, some of which suggest that competition may be effective in some aspects of online platform markets, whilst others suggest that effective competition may be lacking in other aspects of these markets. Second, it analyses the policy implications of these empirical insights. It shows that contemporary policymaking suffers from both misplaced general assumptions and blind spots. Subsequently, it provides recommendations with a view to improving current policy and regulatory proposals in digital markets. Section V concludes.

II. Survey Design and Methodology

The survey underlying the current piece was designed by the author with input from YouGov, an international research data and analytics company that also administered the survey.¹² The survey was conducted online using YouGov's proprietary survey system. The fieldwork took place over two weeks in July 2020. The survey was administered with consumer sample groups in ten countries: the United Kingdom, Germany, France, Italy, the United States, Australia, Singapore, India, China, and Brazil. These ten countries were chosen to reflect a purposive-heterogeneous selection method. The selection is justified by the geographical spread and the

¹² See <https://yougov.co.uk/about/>. YouGov's proprietary panel includes over 11 million registered members globally. Panel members are remunerated by YouGov for their time spent completing surveys.

global coverage provided by the choice of countries across five continents; the desire to include respondents from developing and developed countries; the level of internet penetration and internet use in the sample countries; the level of national competition enforcement and regulatory activity regarding online platforms; and the desire to include the ‘home country’ of the most prominent technology companies operating the most popular platforms globally.¹³

The individuals who participated in the survey are registered with the YouGov panel in each survey country. A total sample size of 11,151 was achieved across the ten survey countries (Figure 1). A quota sampling approach was used on the sample drawn for each country to ensure representativeness across a range of demographics. The sample was selected to ensure the representativeness of the results in line with the adult (18+) population of each country.¹⁴ The country-level results presented in the current piece have been weighted and are nationally representative of each country’s adult population. The results have not been weighted across countries at the total sample level, which means that no adjustment has been made to reflect either the size of the population of the relevant country or the number of respondents from a country within the total sample. Thus, where results are reported at the total sample level, in these results each country represents the proportion it makes up within the overall achieved sample. It was deemed appropriate to report some results at the total sample level because – with the exception of China where most of the US ‘big tech’ platforms do not operate – the main platform providers which have led to concern for competition and regulation purposes are present in all the survey countries. The service offered to consumers by a particular online platform is normally also the same around the world. Similarly, the types of platform services and business practices which have raised concerns are broadly the same across the survey countries. In any case, nationally representative country-level results are frequently reported alongside the total sample results for completeness. The resulting datasets are on file with the author and with YouGov. The breakdown of the unweighted sample is provided in Figure 1.

Country	Total sample size
United Kingdom	2,022
Germany	1,010
France	1,013
Italy	1,009
United States	1,007
Australia	1,012
Singapore	1,013
India	1,018
China	1,027
Brazil	1,020

¹³ These are taken to be Apple, Amazon, Google, Facebook, Microsoft, Baidu, Alibaba, Tencent. These companies (excluding Baidu) occupied 7 of the top 10 largest companies in the world by market capitalisation as of June 2020; see PWC, *Global Top 100 Companies by Market Capitalisation*, July 2020, available at <https://www.pwc.com/gx/en/audit-services/publications/assets/global-top-100-companies-june-2020-update.pdf>.

¹⁴ The sampling frame was based upon official statistics from each country and was stratified by a number of variables in each country such as (at a minimum) age, gender, region, and depending on the available statistics also by ethnicity, highest education level, social grade/socio-economic class, etc.

TOTAL	11,151
-------	--------

Figure 1. Achieved unweighted sample size

The survey was designed to take around 15 minutes to complete on average and contained approximately 30 questions (which varied depending on the routing driven by the responses of a given consumer). The survey was translated into and administered in the local language of the country where it was conducted. Thus, the survey was administered in six languages: English, Chinese, Portuguese, French, German, and Italian. Where relevant, terms and response options in the survey were customised to each local market (e.g. platform names, monetary values, etc.). The translation and localisation were achieved by working with YouGov’s local research teams. Consumer demographics (e.g. country of residence, age, gender, etc.) were drawn from YouGov’s panel profiling database and questions on these were not asked in the survey. This maximised the actual survey time with respondents and allowed for questions in different formats (including open text answers) and various routing options. The questions in the survey were worded using objective language to avoid any leading of the respondents to particular answers. The order of the answer options was randomised for the vast majority of questions.¹⁵

In terms of structure and contents, the survey began with an introductory text which explained to respondents, after providing a definition of ‘consumer’, that they should provide answers based on their views and experiences only as a consumer of the relevant platform products/services.¹⁶ Before starting the survey, respondents were also presented with a definition of ‘online platforms’, which was provided to them again at every point in the survey when the words ‘online platforms’ appeared. For the purposes of the survey, and thus, this research, ‘online platforms’ are defined as

websites or apps that bring together different user groups to interact or transact with one another. Examples include search engines, social media platforms, app stores, online marketplaces (e-commerce platforms), video or image or audio sharing platforms, video or music streaming platforms, dating apps, gaming apps, online travel agents, and so on.

After the introductory text, respondents were asked to choose from lists of named platforms those ones that they used more than once in the last four weeks and those ones that they used at least once in the last 12 months to build an understanding of which *particular* platforms the respondents use.¹⁷ These preliminary questions were followed by questions exploring the features of the consumer demand side of online platforms that are relevant to the effectiveness of competition in online platform markets. The features that were directly

¹⁵ On occasions where the response options involved, for example, a range of dates, the response options were not randomised in order.

¹⁶ The definition of ‘consumer’ provided is that commonly found in legal texts as that of anyone who is acting for purposes that are outside his/her profession, trade, business, or craft. *See e.g.*, Directive 2011/83/EU of the European Parliament and of the Council of 25 October 2011 on consumer rights, amending Council Directive 93/13/EEC and Directive 1999/44/EC of the European Parliament and of the Council and repealing Council Directive 85/577/EEC and Directive 97/7/EC of the European Parliament and of the Council (‘Consumer Rights Directive’) 2011 O.J. (L304) 64, Art. 2. The same introductory text also explained to respondents the purpose of the survey, who was conducting it, the relevant data protection procedures, the ethics review reference number of the survey, etc before asking for their consent to proceed with the survey.

¹⁷ These lists of platforms simply provided a localised selection of platform names without defining the particular service provided by the platforms (e.g. Bing; DuckDuckGo; etc) unless the platform brand on its own would not be sufficient to specify the particular platform service (e.g. Google search; Facebook social network; Facebook Messenger; Apple Music; etc.).

investigated in the survey include: i- how consumers (i.e. end users of platform services) use different platform services and the incidence of switching between platforms or using multiple platforms (multi-homing) for the same activity/need; ii- the amount of choice and the level of quality as perceived by platform users as well as their self-assessment of the effects of using platform services on their well-being; iii- the level of user engagement with various default settings and consumers' attitudes towards (targeted and non-targeted) advertisements and the data collection practices of platforms; iv- the level of comprehension by consumers of the basic operations of online platforms and their business models; v- the trustworthiness of technology companies offering platform services as perceived by consumers; and, vi- the perceived value of platform services for consumers and its implications for competition, particularly regarding 'free' platform products/services.¹⁸ Insights on these features of the demand side can reveal the aspects of online platform markets where competition may (not) be effective and/or where intervention by policymakers, regulators and enforcers may (not) be the most effective in protecting competition.

Almost all survey questions regarding online platforms were presented to consumers by reference to the activity involved, service provided or need fulfilled by platforms rather than by platform name. These different activities, services or needs were purposefully not defined in the survey because the survey aimed at understanding how consumers perceive such activities or needs as distinct from one another. Thus, the survey questions presented consumers with different types of widely-used platform services which are normally 'free' of charge to use for consumers, without providing particular definitions of these and without associating them with particular platform names. The ten types of platforms that consumers were asked about are search engines; social/professional networking; communications/messaging; music streaming; video, audio, or image sharing; video streaming; online marketplaces/e-commerce platforms; ride hailing/transport platforms; booking platforms (for holidays, flights, restaurants, etc.); and, app stores.

Prior to the commencement of the fieldwork, a pilot was conducted with 180 respondents in the UK in June 2020. Some survey questions were revised following the feedback from the pilot and all the pilot responses were discarded from the results.

It is worth noting that surveys constitute a valid method for gathering competition-relevant demand- or supply-side information. Surveys have, indeed, been used also by competition authorities as part of their infringement proceedings and by policymakers in different contexts to inform their activities.¹⁹ Some limitations should, nevertheless, be

¹⁸ After these questions on the relevant features of the demand side of online platforms, the survey included separate questions on consumers' online shopping behaviour, habits and e-commerce, the results of which are not presented in the current article but are left for future work.

¹⁹ See e.g., the Bundeskartellamt's (German Federal Cartel Office) decision finding the collecting and combining of user data from third party websites and apps with users' profiles on Facebook an abuse of a dominant position by Facebook where the Authority extensively used the findings from its consumer survey to support its conclusions; see Facebook, 6th Div. Dec., B6-22/16, 6 Feb. 2019, ¶ 151 *et seq* (currently under appeal), available at

https://www.bundeskartellamt.de/SharedDocs/Entscheidung/EN/Entscheidungen/Missbrauchsaufsicht/2019/B6-22-16.pdf?__blob=publicationFile&v=5. For other references to survey results as part of information gathering processes, see e.g., CMA Digital Markets Taskforce administering a questionnaire aimed at app stores and online marketplaces as part of its evidence gathering activities; Competition and Markets Authority (CMA), Digital Markets Taskforce, *Call for Information*, 1 July 2020, available at https://assets.publishing.service.gov.uk/media/5efc5e433a6f4023c77a135c/Call_for_information_July2020.pdf and the questionnaires for online marketplaces and app stores at <https://www.gov.uk/cma-cases/digital-markets-taskforce#call-for-information>. For use of empirical evidence derived from surveys in the context of market

acknowledged. First, given that all the respondents are internet users, it is possible that consumers who are comfortable with technology and with being online are overrepresented in online surveys.²⁰ Having said that, the online survey method is particularly suitable for the purposes of the current study as the study itself concerns the use of online platforms, which requires participants to be internet users. Second, it is possible that respondents' reported behaviour may differ from how they actually make choices, behave or act when interacting with the platform services that they were asked about. This is a potential limitation inherent to any survey, but there appears to be no obvious reason to assume that respondents' stated behaviour systematically differs from their actual behaviour. Further, any such potential limitation applies only to survey questions regarding consumer behaviour rather than, for example, consumer preferences and attitudes which by definition involve consumers' *opinions* about the relevant issues. Against this backdrop, a relevant question can be that of whether respondents are expressing their *true opinions*. In that context, it has been noted that online surveys, due to the fact that they increase the social distance between the respondent and the questioner, are deemed more likely to extract a true response than, for example, face-to-face interviews.²¹ Thus, given the absence of social pressure to provide the 'correct answers' in online surveys, the remaining potential limitation appears to relate to those consumers who may not have read or understood the questions, which is, again, an inherent limitation in all surveys. Finally, it should be noted that the fieldwork took place during the Covid-19 pandemic, which may have had an impact on how respondents use and perceive the relevant platform services. The survey design took such effects into account to the extent possible by phrasing questions in ways that ensure that the responses of consumers relate to lengths of time and thus, consumer behaviour which span pre-pandemic and pandemic periods. However, irrespective of the pandemic and as with any survey, the results of the current study present a snapshot of consumer choices and preferences and dynamic services all of which may, naturally, change over time.

The next section presents the empirical findings from *all* the questions in the survey except for the preliminary questions on which particular platforms respondents used and the questions on respondents' online shopping habits.²² The findings from these two sets of questions are not reported because the former merely aimed to gather background information on respondents' current uses of particular platforms and the latter related exclusively to e-commerce habits which fall outside the scope of the current piece.

III. Empirical Findings

a. Patterns of platform use, effects on well-being, and engagement with defaults

One of the main objectives of the survey was to explore how consumers use different platforms to fulfill the same need, namely to what extent they use multiple platforms for the same

studies and policymaking, *see e.g.*, Australian Competition & Consumer Commission (ACCC), *Digital Platforms Inquiry: Final Report*, June 2019, available at <https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf>; CMA, *Online Platforms and Digital Advertising: Market Study Final Report*, 1 July 2020, available at https://assets.publishing.service.gov.uk/media/5efc57ed3a6f4023d242ed56/Final_report_1_July_2020_.pdf.

²⁰ *See e.g.*, CMA Market Study Final Report, *supra* note 19, Appendix L, L96.

²¹ *See e.g.*, Linchiat Chang and Jon A. Krosnick, *Comparing Oral Interviewing with Self-Administered Computerized Questionnaires*, 74 (1) PUB. OPINION QUARTERLY 154, 162-163 (2010) finding through an experiment that self-administered computerized surveys lead to more willingness to provide honest answers than in the case of interviews due to absence of the 'social desirability bias'.

²² *See supra* note 18.

purpose, as perceived by themselves. This is important for competition law and regulation purposes because consumers' patterns of platform use, including the extent to which they use more than one platform for a given need (i.e. multi-home) or switch to another platform for the same need, can indicate the existence or absence of competition between platforms to satisfy that consumer need. Similarly, how consumers self-assess the effect of using platforms on their well-being and quality of life can signify their levels of satisfaction with the relevant platform services and provide insights on the perceived value and quality of these services. In the same vein, where default settings presented to consumers when they use platform services relate to parameters of competition between platform operators, the levels of user engagement with defaults can be instructive about the effectiveness of competition. This is, indeed, a recurrent theme in recent and ongoing competition investigations and regulatory proposals in digital markets, as discussed further in Section IV.²³

To explore these features of the demand side, consumers were first asked roughly how many different online platforms they used for various activities in the last 12 months. Consumers have reportedly used more than two different online platforms, on average, for each platform service they used in the last year in all survey countries bar two (Figure 2). The exceptions are the UK and China. In the UK, on average, fewer than two platforms were used for music streaming, ride hailing/transport, and app stores by consumers who report to have used these in the last year. In China, on average, fewer than two platforms were used for music streaming, ride hailing/transport, app stores, and booking platforms by consumers who report to have used these in the last year. However, the average number of platforms used by consumers for these services in the UK and China is still above one and close to two, indeed. Thus, multi-homing (i.e. using more than one platform) technically exists, on average, in every survey country for every platform service that consumers were asked about and reportedly used in the last year. The degree of multi-homing, however, differs both across different platform services and across countries (Figures 2 and 3).

	UK	DE	FR	IT	US	AUS	SG	IN	CN	BR
Search engines	2.43	3.14	3.25	3.09	2.84	2.87	2.83	3.32	2.06	3.87
Social/professional networking	2.84	3.18	3.10	3.08	2.96	3.05	3.16	3.68	2.40	4.19
Communications/messaging	3.07	3.47	3.54	3.49	3.09	3.20	3.47	3.81	2.25	4.29
Music streaming	1.93	2.63	2.62	2.61	2.62	2.54	2.28	3.21	1.85	3.09
Video, audio, or image sharing	2.52	3.08	2.96	3.09	2.90	2.88	2.87	3.61	2.48	3.98
Video streaming	2.58	3.01	3.01	2.99	3.11	2.89	2.69	3.51	2.38	3.36
Online marketplaces/e-commerce platforms	3.04	3.24	3.52	3.19	3.24	3.10	3.48	3.53	2.65	3.96
Ride hailing/transport platforms	1.88	2.62	2.52	2.47	2.52	2.44	2.50	2.75	1.63	2.91
Booking platforms (for holidays, flights, restaurants, etc.)	2.66	2.86	2.68	2.62	2.62	2.88	2.69	2.94	1.97	2.90
App stores	1.84	2.52	2.46	2.63	2.37	2.38	2.45	3.16	1.88	3.56

Figure 2. Mean number of different platforms used (excluding zero) (Base: all respondents, n= 11,151) (Q: Please tell us roughly how many different online platforms you have used for each of the following in the last 12 months. 0-1-2-3-4-5-More than 5)

²³ See text around *infra* note 123.

Multi-homing is reportedly practised by the majority of respondents in every survey country for the following platform services: search engines; communications/messaging; and, online marketplaces/e-commerce (Figure 3). Multi-homing is also reportedly practised for social/professional networking by the majority of respondents in every survey country except for France (Figure 3). It should be noted that not all platforms were used by similar numbers of respondents and some platform services were not used by some respondents in the last year at all. At the total sample level, ride hailing/transport platforms and booking platforms are the most likely platform services which respondents have not used in the last year (55% and 44%, respectively). Looking at the overall total sample, search engines and app stores are the most likely services for which respondents have only used one platform in the last year (32% and 37%, respectively).

	UK	DE	FR	IT	US	AUS	SG	IN	CN	BR
Search engines	54%	61%	65%	65%	62%	61%	61%	68%	58%	74%
Social/professional networking	53%	53%	43%	57%	54%	58%	69%	83%	70%	82%
Communications/messaging	74%	64%	74%	81%	64%	74%	87%	86%	67%	90%
Music streaming	26%	30%	30%	40%	43%	40%	33%	64%	47%	50%
Video, audio, or image sharing	44%	39%	42%	60%	46%	51%	56%	79%	63%	80%
Video streaming	43%	42%	39%	52%	58%	52%	51%	71%	61%	60%
Online marketplaces/e-commerce platforms	56%	52%	66%	62%	58%	56%	77%	76%	75%	75%
Ride hailing/transport platforms	13%	16%	17%	18%	21%	27%	48%	49%	29%	41%
Booking platforms (for holidays, flights, restaurants, etc.)	37%	35%	38%	43%	29%	47%	45%	51%	39%	35%
App stores	25%	36%	25%	42%	40%	39%	42%	61%	41%	68%

Figure 3. Levels of multi-homing (using more than one platform) across countries (Base: all respondents, n= 11,151) (Q: Please tell us roughly how many different online platforms you have used for each of the following in the last 12 months. 0-1-2-3-4-5-More than 5)

Respondents were also asked about the effect of using online platforms on their general well-being or quality of life, taking into account their experience with different platform services in the last 5 years. It should again be noted that the number of respondents who have used platforms for the relevant services over the last 5 years varies (Figure 4).

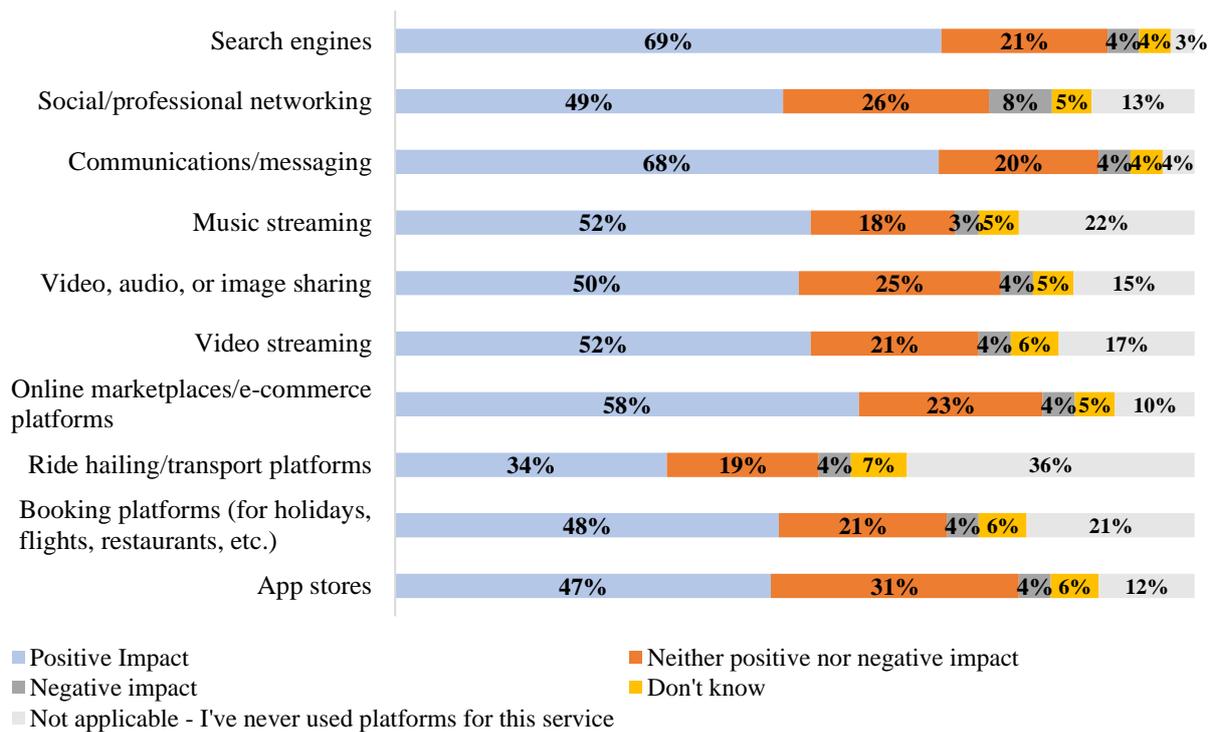


Figure 4. Effect of using online platforms on general well-being or quality of life (Base: all respondents, n= 11,151) (Q: If you think about your overall experience with each of the platform services below in the last 5 years, how would you describe the effect of using these on your general well-being or quality of life? Very positive impact-Fairly positive impact-Neither positive nor negative impact-Fairly negative impact-Very negative impact-Don't know-Not applicable – I've never used platforms for this service)

When one considers the responses of only those who report to have used platforms for the relevant services in the last 5 years, the majority of users of all platform services reports a positive impact on their well-being or quality of life (Figure 5). The highest expressions of positive impact were recorded for search engines and communications/messaging with over 70% of users noting a positive impact (71% each) (Figure 5).

Overall, when the responses of only those who report to have used the relevant platform services in the last 5 years are included, few platform users report that using online platforms had a fairly or very negative impact on their general well-being or quality of life. This is highest for social/professional networking platforms (9%) (Figure 5).

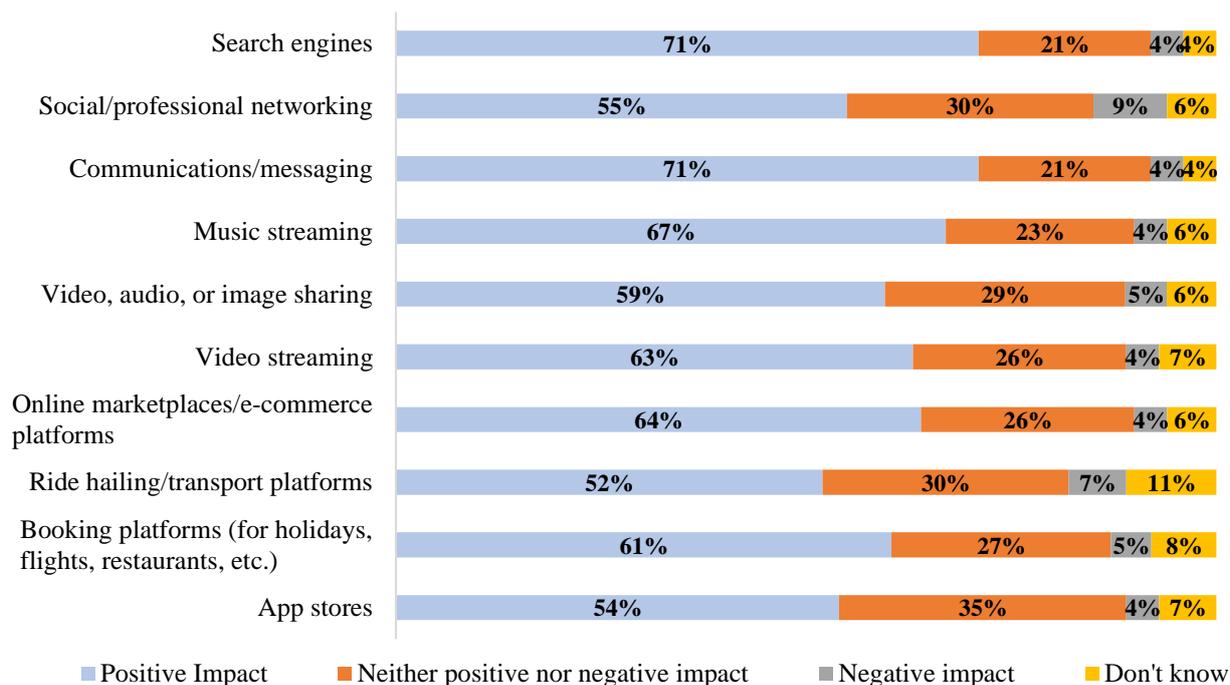


Figure 5. Effect of using online platforms on general well-being or quality of life excluding ‘not applicable’ (Base: all respondents, n= 11,151) (Q: If you think about your overall experience with each of the platform services below in the last 5 years, how would you describe the effect of using these on your general well-being or quality of life? Very positive impact-Fairly positive impact-Neither positive nor negative impact-Fairly negative impact-Very negative impact-Don’t know-Not applicable – I’ve never used platforms for this service)

Consumers in the UK are the most likely out of all ten countries to say that using social/professional networking platforms has had a negative effect on their general well-being or quality of life (14%), followed by those in the US (13%). In five out of ten survey countries, 10% or more users of social/professional networking platforms state that using these platforms had a ‘fairly negative’ or ‘very negative’ impact on their well-being or quality of life (UK, US, Australia, Germany, France). The only other service regarding which 10% or more of users say has had a ‘fairly negative’ or ‘very negative’ impact on their well-being or quality of life is ride-hailing/transport platforms (France, 12%; Germany, 11%; US, 10%). A higher proportion of Brazilian platform users reports a positive impact on their well-being or quality of life than consumers in any other country in seven out of ten categories of platform services (all bar music streaming; ride hailing/transport; and booking platforms).

To further explore consumers’ engagement with platform services, respondents were asked how often they change the defaults for different settings. Specifically, they were probed about how often they change: the initial default search engine on their device; the initial default internet browser on their device; privacy or data collection settings and permissions of a platform or app; and cookie settings when browsing the internet.

Over 80% of all respondents report changing the default privacy/data collection settings and permissions of a platform or app (83%) (Figure 6).²⁴ Cookie settings are reportedly changed at some level of frequency with 80% all respondents declaring to change these settings when browsing the internet. Namely, around 8 out of 10 platform users say that they change the default privacy/data collection settings and permissions of a platform or app and cookie settings when browsing the internet. The lowest incidence of changing defaults is recorded for the initial default search engine on users’ devices and the second lowest incidence of changing

²⁴ The figures in this paragraph exclude those who chose ‘not applicable’ in response to the question.

defaults is for the initial default browser on users’ devices, but around three quarters of users still reportedly do so (74% and 75%, respectively). Across all the default settings that the users were asked about, at most around a quarter of users report that they ‘never’ change the defaults and at most around one sixth report to ‘always’ change them (Figure 6).

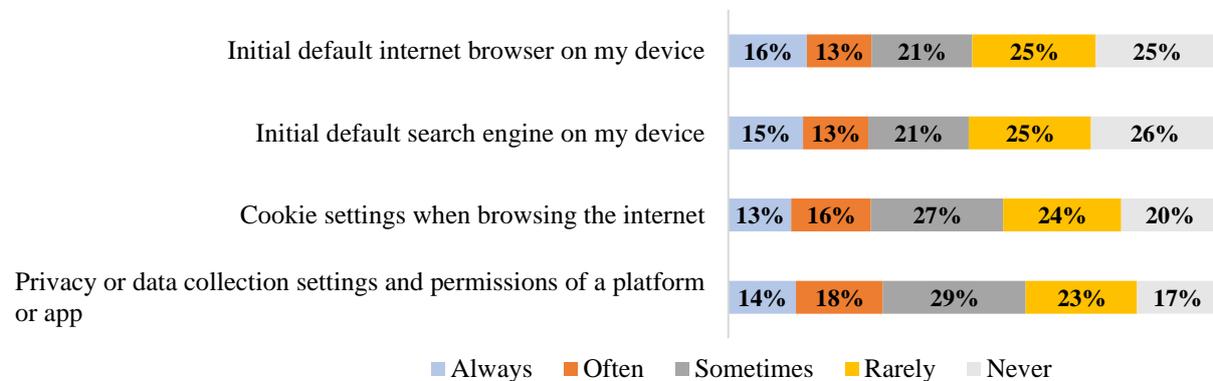


Figure 6. Frequency of changing defaults by platform users excluding ‘not applicable’ (Base: all respondents, n= 11,151) (Q: How often do you change the defaults for the following? Almost-Often-Sometimes-Rarely-Never-Not Applicable)

At the national level, the majority of users in every survey country reportedly changes all of the defaults that they were asked about at some level of frequency (Figure 7). German consumers are the least likely to change the initial default search engine on their device (64%), whereas Chinese users are the most likely to do so (92%).²⁵ Indian users are the most likely to ‘always’ change the default search engine (26%), meaning that they are nearly three times more likely than Italian users (9%) and twice more likely than UK, German, and Australian users (13% each) to ‘always’ change the default search engine on their device.

When it comes to the default privacy/data collection settings and permissions of a platform or app, the highest incidence of changing them is in China and Brazil, where over 90% of platform users change these settings and permissions (93% and 92%, respectively). Consumers in France are the least likely to change the privacy/data collection defaults, although even in that case nearly 3 out of 4 users do so (73%).

	UK	DE	FR	IT	US	AUS	SG	IN	CN	BR	All
Privacy/data collection settings & permissions of a platform/app	80%	76%	73%	83%	80%	83%	88%	88%	93%	92%	83%
Cookie settings when browsing the internet	74%	77%	71%	78%	78%	79%	85%	86%	89%	89%	80%
Initial default search engine on my device	65%	64%	66%	74%	71%	72%	80%	82%	92%	83%	74%
Initial default internet browser on my device	65%	65%	67%	74%	73%	73%	82%	86%	92%	84%	75%

²⁵ The figures in this and the next paragraph exclude those who chose ‘not applicable’ in response to the question.

Figure 7. Users ever changing defaults across countries excluding ‘not applicable’ (Base: all respondents, n= 11,151) (Q: How often do you change the defaults for the following? Almost-Often-Sometimes-Rarely-Never-Not Applicable)

b. Platform users’ perceptions of quality and choice, and switching activity

Consumers were asked questions exploring the perceived quality of the platform services that they use and how much choice they think they have.²⁶ Consumers were also specifically probed about whether they have switched between platforms and the reasons why they switched or did not switch. Quality and choice are two major parameters of competition alongside price, and are particularly important when there is no monetary price, as is the case with most online platform services that have come under scrutiny.²⁷ When combined with the findings from Section III.a, this inquiry contributes to building a comprehensive understanding of consumers’ use of and satisfaction with different platform services. This understanding is further enhanced by investigating the extent to which consumers switch from one platform to another. This investigation provides insights into any switching barriers that may impede competition between platforms and into the platforms that users view as competitors (i.e. substitutes).

The majority of users of all platforms bar one (ride-hailing/transport platforms) reports a high-quality (‘very high’ or ‘fairly high’) experience when using the different services in the last five years. A minority reports a low-quality (‘very low’ or ‘fairly low’) experience, which is the highest for social/professional networking and ride-hailing/transport platforms (7% each) (Figure 8).

	Very high quality	Fairly high quality	Average quality	Fairly low quality	Very low quality	Don’t know	Net: high quality	Net: low quality
Search engines	23%	43%	25%	3%	1%	5%	66%	4%
Social/professional networking	16%	39%	31%	5%	2%	8%	54%	7%
Communications/messaging	20%	44%	27%	3%	1%	6%	63%	4%
Music streaming	23%	41%	23%	3%	1%	8%	64%	5%
Video, audio, or image sharing	17%	41%	29%	4%	1%	9%	58%	5%
Video streaming	20%	41%	26%	4%	1%	8%	61%	5%
Online marketplaces/e-commerce platforms	17%	42%	29%	3%	1%	8%	59%	4%
Ride hailing/transport platforms	11%	35%	34%	5%	2%	12%	47%	7%
Booking platforms (for holidays, flights, restaurants etc.)	14%	41%	31%	4%	1%	9%	55%	5%
App stores	16%	38%	31%	4%	1%	8%	54%	6%

²⁶ These questions were only asked to those respondents who responded to the question regarding the effect of using a platform on their well-being or quality of life in the last five years with an answer other than ‘not applicable – I’ve never used platforms for this service’ (Figure 4).

²⁷ For the importance of quality and choice in the absence of price, *see e.g.*, CMA Market Study Final Report, *supra* note 19, Box 2:2: Key features of online platforms, at 46. For a discussion of how ‘antitrust injury’ includes lower quality, less innovation, etc. in the context of zero-priced products/services in the digital economy, *see* John N. Newman, *Antitrust in Zero-Price Markets: Applications*, 94 WASH. U. L. REV. 49, 58-60 (2016).

Figure 8. Quality of experience with different platform services (Base: all who ever used the service in the last five years, n= 7,160 – 10,845) (Q: Which of the following best describes the level of quality you feel you experience when it comes to the following services offered by different platforms?)

American consumers are the most likely to cite a low-quality experience for seven out of ten platforms they were asked about: social/professional networking; ride-hailing/transport platforms; online marketplaces/e-commerce platforms; booking platforms; app stores; video, audio, or image sharing platforms; and, communications/messaging platforms (12%, 10%, 7%, 8%, 9%, 7%, and 7%, respectively). American consumers who use search engines are also the least likely to report a high-quality experience, but this is still a majority (52%). Chinese consumers who use search engines are the most likely to report a low-quality (‘fairly low’ or ‘very low’) experience (9%).²⁸

In terms of choice, the majority of users of all platforms bar two (ride-hailing/transport platforms and app stores) reports to have ‘a lot’ of or ‘a fair amount’ of choice when it comes to their ability to pick between different platforms for the relevant services (Figure 9). Six out of ten platform users say that there is ‘a lot’ of or ‘a fair amount’ of choice when picking between different booking platforms (61%) or online marketplaces/e-commerce platforms (60%).

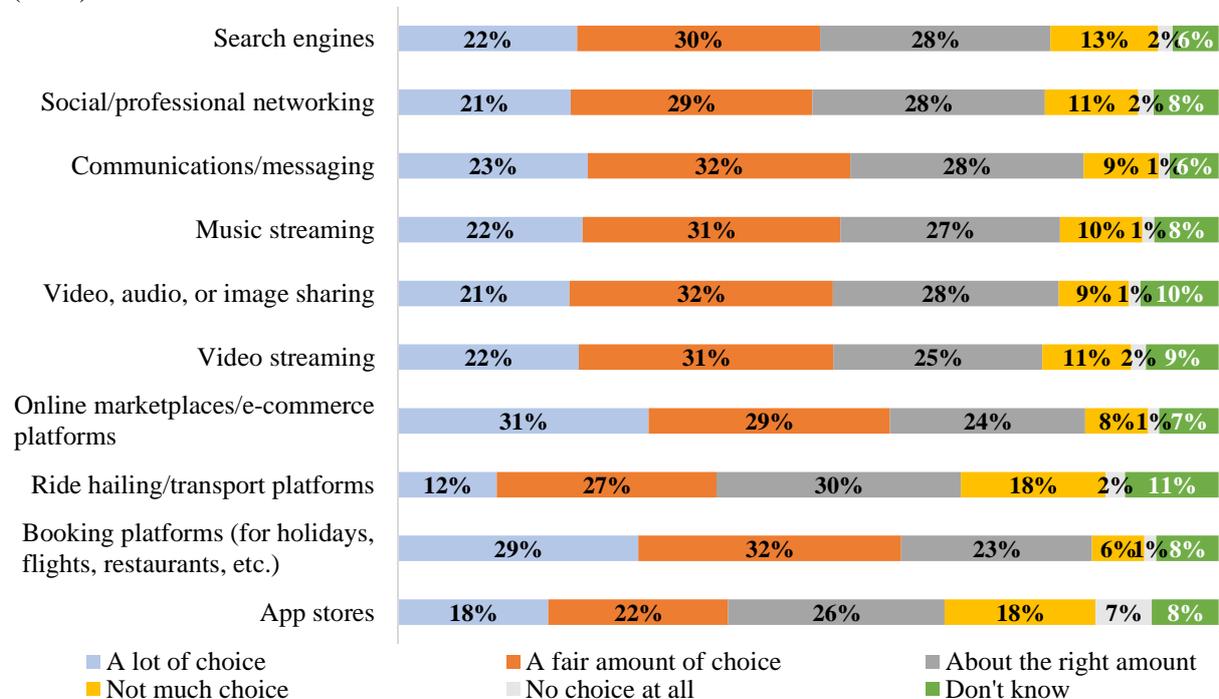


Figure 9. Amount of perceived choice between different platforms available (Base: all who ever used the service in the last five years, n= 7,160 – 10,845) (Q: Which of the following best describes how much choice you feel you have when it comes to your ability to pick between different platforms for the following services?)

Similar to the perceived quality of their experience, American consumers are the most likely to say that they have ‘no choice at all’ or ‘not much choice’ for social/professional networking platforms (19%) and are joint most likely with UK consumers to report there to be ‘no choice at all’ or ‘not much choice’ for search engines (18% each). German consumers are the least likely to say that there is ‘a lot’ or ‘a fair amount’ of choice for online marketplaces/e-commerce platforms (45%).

²⁸ Chinese consumers are also more likely than any other to change the initial default search engine on their device; see text after *supra* note 25.

When asked when, if ever, the respondents most recently made a decision not to use a particular platform again, nearly two fifths (39%) of all consumers surveyed report to have made such a decision within the last two years.²⁹ Nearly a third of all respondents reported ‘never’ having made a decision not to use a platform again (29%), whereas a fifth made such a decision in the last six months (20%). When those consumers who decided not to use a platform again within the last two years were probed about the reasons for doing so, their main reasons were concern about the platform’s terms of use or data and privacy policies (34%) and no longer needing the type of service provided by the platform in question (34%) (Figure 10).³⁰

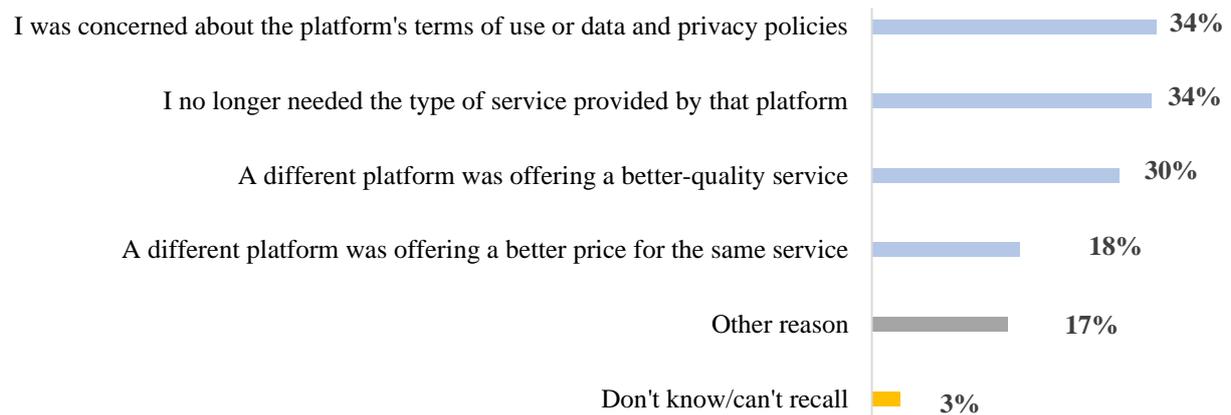


Figure 10. Reasons for deciding not to use a particular platform again (Base: all who decided to stop using a particular platform in the last 2 years, n= 4,339) (Q: You said that, within the last 2 years, you decided not to use a particular platform again. Which of the following best explains your decision? Please choose all that apply.)

At the national level, Indian consumers are the most likely to report a concern with terms of use/data and privacy policies in explaining their decision to stop using a platform (44%). Italian consumers are the least likely to do so (22%).

Those respondents who reported *not* having made a decision to stop using a particular platform within the last two years were also asked about the reasons for their decision. The most common reason was contentment with the price and quality of service offered by platforms that they use (43%) (Figure 11).³¹ A fifth of consumers said that the decision not to stop using a platform was due to their unawareness of any other platforms that offer the same service (20%), whilst nearly a fifth cited concern with losing access to some data that they value (search history, messages, friend connections, etc.) if they stopped using a platform (19%).

²⁹ The primary question asked consumers when, if ever, was the last time they made a decision not to use a particular platform. The response options were: in the last 6 months; more than 6 months ago, but within the last year; more than a year ago, but within the last 2 years; more than 2 years ago; never; do not know. Depending on the response to the primary question, the follow-up questions asked which of the options provided best explains their decision to stop or not to stop using a particular platform. Those respondents who said that they decided not to use a platform again within the last two years were also asked to name which platform(s) they decided not to use, which they could enter as free text.

³⁰ Respondents could pick multiple reasons in response to this question.

³¹ Respondents could pick multiple reasons in response to this question.

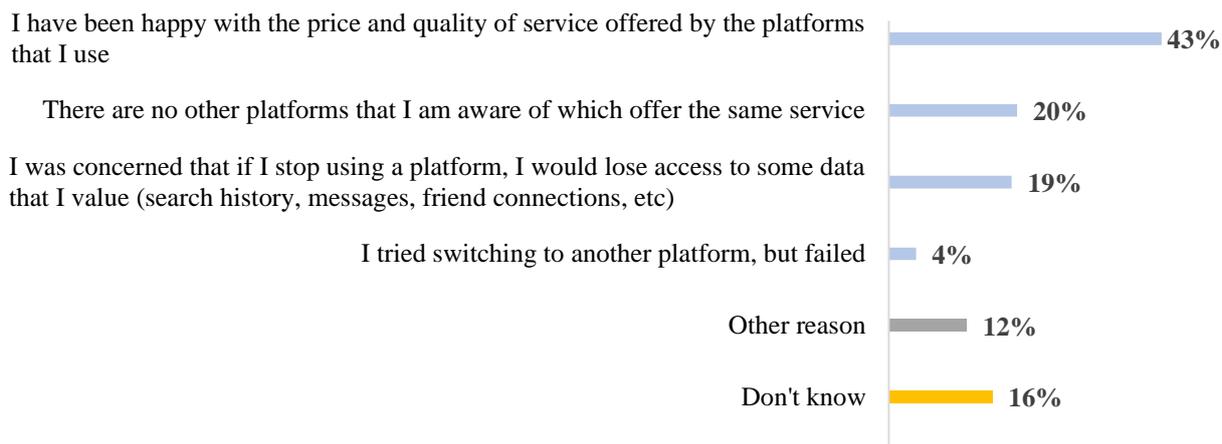


Figure 11. Reasons for not deciding to stop using a particular platform (Base: all who did not decide to stop using a platform in the last two years, n= 4,234) (Q: You said that within the last 2 years, you have not made a decision to stop using a particular platform. Why is this? Please choose all that apply.)

Those consumers who reportedly decided within the last two years to stop using a particular platform were asked *which* platform(s) they decided not to use again. Answers were provided in open text (i.e. the respondents had to type their answer). The platform that most of these users report to have stopped using is Facebook: of those who stopped using a platform in the last 2 years, around 12% report to have made a decision to stop using Facebook/Facebook Messenger.³² These reports are followed by mentions of TikTok, Twitter, Snapchat, Google, Amazon, Instagram, and Yahoo, in decreasing frequency.³³ As noted above, 39% of all respondents reported having made a decision to stop using a platform within the last two years.

c. Digital literacy and attitudes towards platform data collection practices and advertisements

Consumers were asked numerous questions investigating the extent to which they understand the online platform business model, how it operates, and how it is funded. They were also probed about their attitudes towards ‘free’ platforms funded by advertising (e.g. search engines, social networks) and the data collection practices of some platforms, and their comprehension of the basic workings of a universally-used platform (i.e. search engines). These questions aimed to explore platform users’ levels of digital literacy. In this context, ‘digital literacy’ can be understood as a system of skills, strategies, and knowledge (including a degree of commercial awareness) necessary for the users of technology to ‘function effectively in digital environments’.³⁴ Consumer levels of digital literacy matter from a competition perspective

³² This is possibly an underestimate as the base of respondents includes consumers from China where Facebook is not available. However, it cannot be assumed that respondents in China did not have access to Facebook in the relevant time period (i.e. the last two years); thus, they have not been excluded from the base of respondents.

³³ These are the platform names that were mentioned by more than 2% of the open text responses to this question. The platform mentioned the most after Facebook/Facebook Messenger is TikTok with around 6% of the relevant respondents mentioning it by name. The consumers had to enter a text response when answering this question before they could move on to the next question. The survey did not provide the option to choose ‘I don’t know’ in response to this question as it did not make sense to do so. However, the respondents could (and some did) enter other characters, space bars, etc. to move onto the next question rather than provide meaningful text.

³⁴ In the education literature, ‘digital literacy’ has been noted to involve more than ‘the mere ability to use software or operate a digital device; it includes a large variety of complex cognitive, motor, sociological, and emotional skills, which users need in order to function effectively in digital environments’; Yoram Eshet-Alkalai, *Digital Literacy: A Conceptual Framework for Survival Skills in the Digital Era*, J. EDUC. MULTIMEDIA AND HYPERMEDIA 93, 93, 102 (2004).

because effective competition requires market participants, including consumers, to make well-informed choices, as discussed further below.³⁵ Similarly, user attitudes towards the data collection practices of platforms are relevant to competition because data are an essential input for the business model of many of the most popular platforms.³⁶ Targeted, personalised advertising using data collected by platforms on users and their activities has particularly raised concerns for data protection/privacy reasons.³⁷ Privacy can be a parameter of competition on which platform providers compete, but the extent to which competition law analyses should incorporate data protection concerns is debated.³⁸ Users' attitudes towards platform data collection practices and advertisements combined with their digital literacy levels can provide insights on how informed consumer consumption choices are in the relevant markets.

When asked about how the Google search engine and the Facebook social network were provided free of charge to users, the majority of respondents could not correctly answer this question (Figure 12). Namely, the majority of respondents, all of whom are internet users, do not know how the Google search engine or the Facebook social network are free of charge to use. Only 43% of respondents for the Google search engine and 42% of respondents for the Facebook social network correctly answered this question by reporting that advertisers pay the platform provider to show users advertisements (Figure 12).³⁹

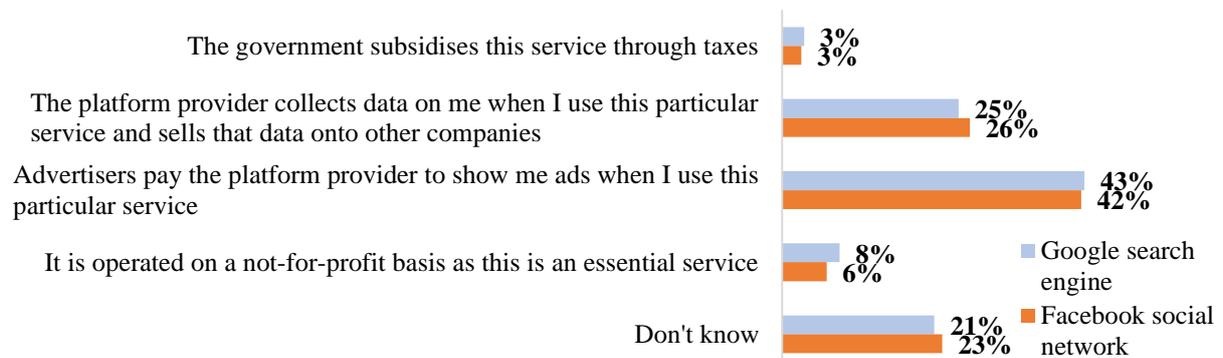


Figure 12. Consumer understanding of how platforms are provided free of charge (Base: all respondents, n=

³⁵ See *infra* text around note 90.

³⁶ Some commentators have called technology companies such as Google and Facebook ‘data-opolies’ due to their business models’ heavy reliance on personal data flows of significant volume and variety; see Maurice Stucke, *Should We be Concerned about Data-Opolies?*, 2 GEO. L. TECH. REV. 275 (2018).

³⁷ ‘Personalised advertising’ involves advertisements which are ‘targeted based on personal information about the user, whether volunteered or observed from activity across the web over time’; see CMA Market Study Final Report, *supra* note 19, ¶ 2.21. Personalised advertising can be distinguished from ‘contextual advertising’ which involved advertisements ‘targeted on the basis of the content the user is currently viewing, as in most traditional forms of non-digital advertising’; *id.*

³⁸ On the interplay between data protection and competition law, and privacy as a parameter of competition, see e.g. Katharine Kemp, *Concealed Data Practices and Competition Law: Why It Matters*, 16 (2) EUR. COMPETITION J. 628 (2020). For the ‘tensions between [the] incentives to compete for increasing amounts of user data, and the legal framework that is in place to protect consumers’ privacy’, see also CMA, Market Study Final Report, *supra* note 19, ¶ 2.23 and Ch. 5. The interplay between data protection law and the competition law is also at the heart of the competition assessment in Bundeskartellamt, *Facebook*, *supra* note 19.

³⁹ The correct response to this question, namely that advertisers pay the particular platform to show users advertisements when the consumers use the particular service, is based on the explanations provided by Google and Facebook on how they fund their search engine and social network, respectively. In the same vein, some of the incorrect response options provided for this question (e.g. that the platform *sells* the data that it collects on users) are also based on the information provided by Google and Facebook on how they do *not* fund the relevant services. See Google, *Our Approach to Search*, available at <https://www.google.com/search/howsearchworks/mission/> and Facebook, *How Our Services are Funded*, available at <https://www.facebook.com/legal/terms>.

11,151) (Q: To the best of your knowledge, how are the following provided free of charge to users? Google search engine – Facebook social network)

Those respondents who reported using these particular platforms more than once in the last four weeks were slightly more likely to answer correctly this question, but even amongst such respondents, the majority did not know how these platforms were provided free of charge to users. Only 46% of all search engine users (i.e. those who reportedly accessed *any* search engine listed in the survey more than once in the last four weeks) and only 48% of all Google search engine users (i.e. those who reportedly used the Google search engine more than once in the last four weeks) correctly identified how they use this service for ‘free’.⁴⁰ The results are very similar for Facebook: fewer than half of Facebook users (i.e. those who reportedly used the platform more than once in the last four weeks) (49%) understand how the social network is provided to them for ‘free’.⁴¹

These findings are consistent across the survey countries: only the majority of respondents in the UK (51%) and in Brazil (52%) correctly reports how the Google search engine is funded, and only the majority of Brazilian respondents (51%) correctly identifies how Facebook is funded, although half of all UK respondents (50%) do so, too.⁴² French consumers are the most likely to think that the Google search engine collects data on them and sells that data to third parties to fund its service (31%), and German consumers are the most likely to think this about the Facebook social network (34%). French consumers are also the least likely to identify correctly how the Google search engine is funded (32%) and the least likely (alongside Chinese consumers) correctly to identify how the Facebook social network is funded (33% each). Notably, neither the Google search engine nor the Facebook social network has any presence in China.⁴³ At least one in ten respondents in China, India, and Brazil thinks that both of these platforms are operated on a not-for-profit basis as they are essential services. Those over the age of 55 and male respondents are more likely to answer correctly this question on funding with respect to both Google and Facebook.⁴⁴ Over one in five respondents profess not to know how these platform services are provided free of charge to users.

After being asked about how they think that the Google search engine and Facebook social network are provided free of charge to users, respondents were questioned specifically on how they feel about some free-to-use platforms’ being funded by advertising. They were then further probed about how they feel about some advertising-funded platforms’ also making

⁴⁰ Amongst respondents who report not to have used the Google search engine more than once in the last four weeks, the correct response rate falls to 34%.

⁴¹ Amongst respondents who report not to have used the Facebook social network more than once in the last four weeks, the correct response rate falls to 33%.

⁴² The UK results are in line with research carried out by the Office of Telecommunications (Ofcom) in the UK which similarly found that just over half of UK adults (53%) are aware that search engines are free to use because they are funded by advertising; see Ofcom, *Adults’ Media Use & Attitudes: Report 2020*, at 19, available at https://www.ofcom.org.uk/data/assets/pdf_file/0031/196375/adults-media-use-and-attitudes-2020-report.pdf. Whereas Ofcom’s survey involves respondents aged 16 and over, the survey underlying the current research involved respondents aged 18 and over.

⁴³ This was also confirmed by the survey responses. This question was asked to all respondents, including those in China, and used the names of the two well-known platforms to elicit an understanding of the business model of two of the most widely-known platforms. Omitting the respondents from China from the base of respondents to this question makes very little to no difference in the results. Other questions in the survey naming particular platforms were tailored to each country.

⁴⁴ 45% of over 55s choose the correct response regarding Google and 44% do so for Facebook. 45% of male respondents choose the correct response regarding Google (compared to 40% of female respondents) and 43% do so regarding Facebook (compared to 41% of female respondents).

money by collecting data on users and their activities in order to target them with personally-tailored advertisements.

When respondents were provided with the information that some platforms are free to use and funded by advertising *without* mentioning personalised, tailored targeting of advertisements, the most common feeling is that consumers do not like being targeted with advertisements, but they would not want to pay for any of these services, either (42%) (Figure 13). Three in ten think that the companies get more out of the arrangement than they do (30%) and three in ten think that they get a good deal because they do not pay a fee for these services (30%).⁴⁵ Around one in five consumers says that they do not mind this practice (22%). Fewer than one in ten (7%) consumers say they would rather pay a fee for these platform services than see advertisements.

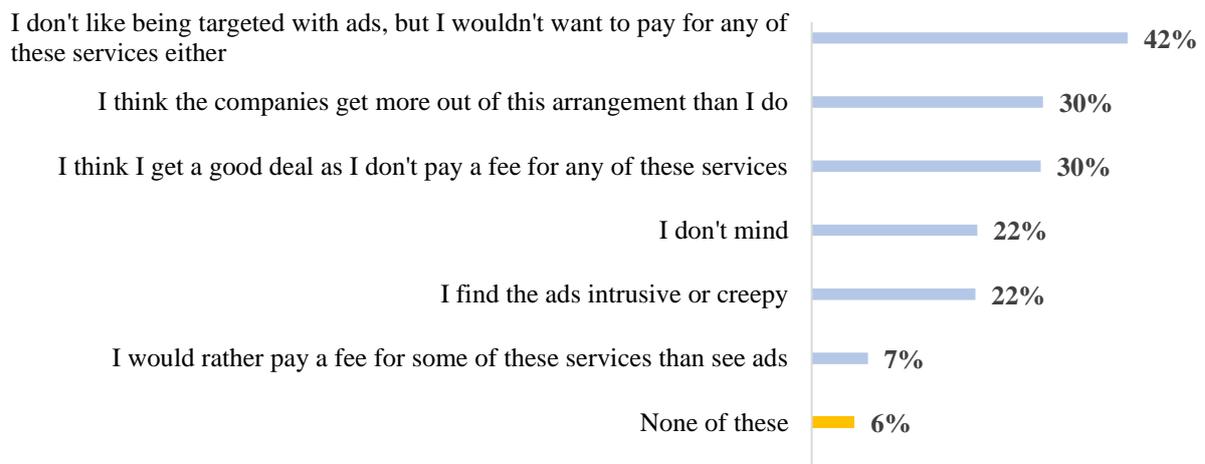


Figure 13. Consumer attitudes around platforms funded by advertising (Base: all respondents, n= 11,151) (Q: Some platforms that are free of charge to use such as search engines, social media, video sharing platforms, and so on are funded by advertising (i.e. advertisers pay the platform to show you their advert). How do you feel about this? Please select all that apply.)

UK consumers are the most likely to say that they do not like being targeted with advertisements, but also would not pay for these services (51%), despite the fact that they are also more likely to find the advertisements ‘intrusive or creepy’ than respondents from any other country (25%). In contrast to the majority of UK consumers, only a third of German consumers do not like being targeted with advertisements, but also would not pay for these services (34%). German consumers and Indian consumers are the most likely to think that they get a good deal as they do not pay for the services (40% each). Only one in twenty consumers in Germany or in the UK would rather pay a fee for these services than see advertisements (5% each).

When respondents were asked the follow-up question informing them that some platforms that are free to use and funded by advertising also make money by tailoring advertisements personally to them on the basis of the data that the platform collects on them and their activities, the most common attitude is consistent; a slightly higher proportion of respondents say that they do not like their data being collected, but would not want to pay for any of these services, either (46%) (Figure 14). Around a third find this type of data collection intrusive or creepy (34%) and think that the companies get more out of this arrangement than users (31%). In this iteration of the question, only one in six consumers thinks that users get a

⁴⁵ Both questions on advertising and funding allowed respondents to choose multiple responses.

good deal because they do not pay for these services (17%). The proportion of respondents who say that they would rather pay a fee for some of these services increases by half (10%). A little over one in ten consumers say that they do not mind this practice (14%).

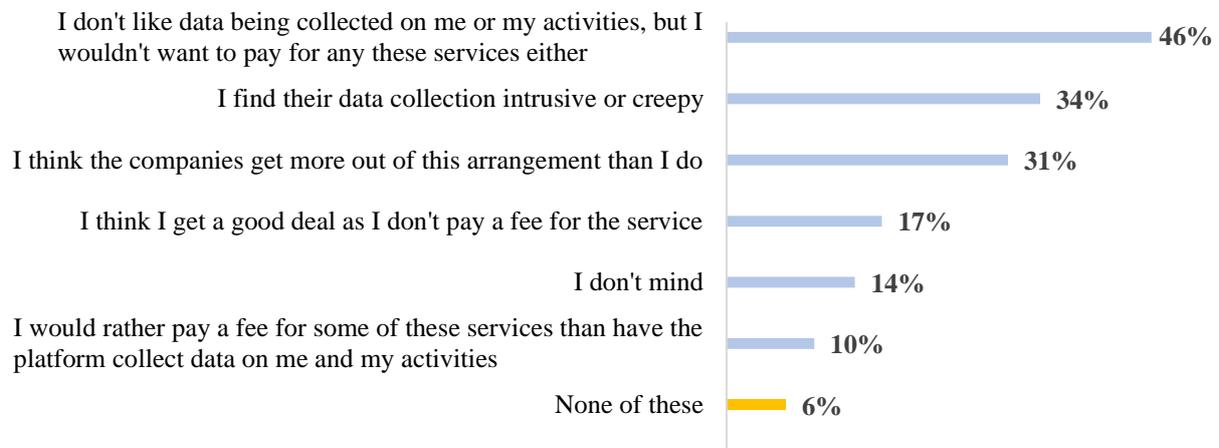


Figure 14. Consumer attitudes around platform data collection for targeted, personalised advertising (Base: all respondents, n= 11,151) (Q: Some platforms that are free of charge to use and funded by advertising also make money by collecting data on you and your activities to allow advertisers to target you with ads tailored to you personally. How do you feel about this? Please select all that apply.)

In response to this version of the question, Singaporean consumers are the most likely to say that they dislike the data collection practices, but that they are also unwilling to pay for the services (54%), while German consumers are the least likely to say this (38%). Over a fifth of German consumers (22%) and nearly a third of Indian consumers (29%) think that they still get a good deal as they do not pay a fee for the service.

Under both iterations of the question, those aged over 55 are more likely than any other age group to say that they do not like being targeted with advertisements or data being collected on them or their activities, but would not pay for any of these services in either case (46% and 50%, respectively). The finding that consumers are not willing to pay for the free-of-charge platform services was confirmed elsewhere in the survey, too, as discussed below, and tallies with the findings of other surveys.⁴⁶

To develop a deeper evaluation of consumers' digital literacy levels, and particularly their understanding of how online platforms operate, respondents were asked how they think a search engine ranks the results that it displays to them when they enter a search query. As most internet users were expected to be more likely to use a search engine than any other platform mentioned in the survey, this question was asked in the context of a search engine.⁴⁷

⁴⁶ See text around *infra* note 56 for a discussion of consumer responses to questions exploring their valuation of free-of-charge platform services. For similar findings, see e.g. findings of a survey in the UK conducted by the Internet Advertising Bureau (IAB) showing that 89% of people prefer having an advertising-funded internet to paying for online services and 84% would be 'furious' if they had to pay every time they used an online service; IAB, *Consumer Attitudes Towards Digital Advertising*, 26 June 2019, available at <https://www.iabuk.com/research/consumer-attitudes-towards-digital-advertising>. For similar results in a survey conducted in the US, see Digital Advertising Alliance, *Four in Five Say Availability of Free Apps Would Influence Decision on Which Mobile Phone to Purchase*, 28 Sept. 2020, available at <https://digitaladvertisingalliance.org/press-release/americans-value-free-ad-supported-online-services-1400year-annual-value-jumps-more-200>.

⁴⁷ The survey results confirm that the platform service used by most respondents in the last 5 years is, indeed, a search engine, with 10,845 (weighted) respondents reporting to have done so (97%).

As with the lack of knowledge regarding how the Google search engine or the Facebook social network is funded, the majority of respondents lacks an understanding of how a search engine ranks the results that it displays in response to search queries. Only around one in three consumers knows how a search engine ranks the results that it displays (i.e. that the results are ranked in the order that the platform algorithms decide is most relevant to the user and their search query) (32%) (Figure 15).⁴⁸ One in four consumers thinks that the results are ranked in the order of how much third parties pay the platform to show each result (25%). Nearly a quarter of all respondents confess that they ‘have no idea’ how a search engine ranks results (24%).

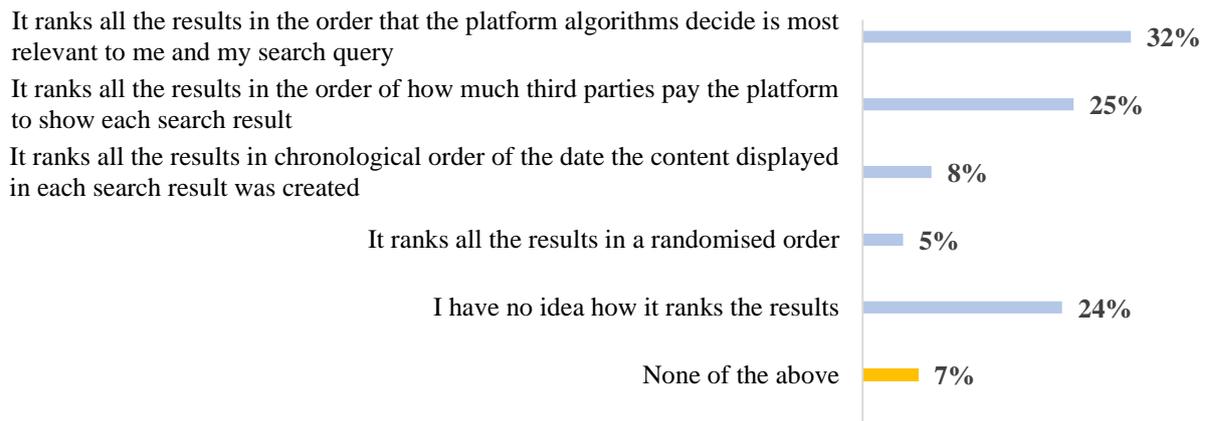


Figure 15. Consumer understanding of how a search engine ranks results (Base: all respondents, n= 11,151) (Q: As far as you are aware, how does a search engine rank the results that it displays to you when you enter a search query? Please choose only one.)

The lack of knowledge is consistent across survey countries: nearly seven out of ten consumers in each and every survey country do not know how a search engine ranks its results. Consumers in the US and in Australia are the most likely to say that they have ‘no idea’ how a search engine ranks the results (28% each), whilst UK consumers are the most likely to think that the results are ranked in the order of payment by third parties (37%). Consumers in Brazil and in Italy are the most likely to identify correctly how a search engine ranks results, but only fewer than four in ten do so (37% each).

Those who reportedly used a search engine in the last 5 years are only slightly more likely to think that the results are displayed in the order that the platform algorithms decide is most relevant to the user and their search query (33% up from 32%), but they are also slightly more likely to think that the results are ranked in the order of the payment by third parties (26% up from 25%). Both of these ratios (namely, for the correct response and the incorrect response) slightly increase for respondents who have used a search engine more than once in the last four weeks (35% up from 33%, and 27% up from 26%, respectively). Those who have used a search engine in the last five years are only slightly less likely to say that they have ‘no idea’ than those who say they never used a search engine in the last 5 years (23% down from 24%). Thus, overall, whether respondents reportedly used a search engine, and if so, how recently, seems

⁴⁸ The correct response option to this question is based on the explanation of how the Google search engine works as provided by Google; see Google, *How Search Algorithms Work*, available at <https://www.google.com/search/howsearchworks/algorithms/>. See e.g., in the same vein, Bing, *Webmaster Guidelines: How Bing Ranks Your Content*, available at <https://www.bing.com/webmasters/help/webmasters-guidelines-30fba23a>.

to make little difference on its own to whether they understand how a search engine ranks results.

Respondents aged 18-24 are more likely than others to know how a search engine ranks results (45%), and respondents over the age of 55 are the least likely to do so (23%). Respondents aged 18-24 who report to have used a search engine more than once in the last four weeks are the age group with the highest correct response rate: every other person in this group correctly identifies how a search engine ranks results (50%). Within the group of respondents who reportedly used a search engine more than once in the last four weeks, there appears to be an inverse relation between their age group and their likelihood of identifying correctly how a search engine ranks results.⁴⁹

Nationally, in three survey countries (UK, France, Singapore), the majority of those aged 18-24 (and *only* the majority in this age group) correctly identifies how a search engine ranks results (55%, 51%, 55%, respectively). Looking at the responses of those who reportedly used a search engine more than once in the last four weeks, the majority of users aged 18-24 in the UK, Germany, France, Italy, Singapore, and China also correctly identifies the search engine ranking mechanism (56%, 54%, 55%, 55%, 64%, 52%, respectively).⁵⁰ Notably, there appears *no* clear link between the highest formal education level of respondents and their likelihood of correctly answering this question in any survey country.⁵¹ Therefore, it appears that a combination of age and the frequency and/or recency of search engine use may be contributing to the respondents' understanding of how a search engine generates results in response to queries.⁵²

d. Trustworthiness, and consumer perceptions of technology companies and the 'big tech'

To understand consumers' perceptions of technology companies that provide online platform services, consumers were asked their opinion on how trustworthy or untrustworthy technology

⁴⁹ The age groups are 18-24, 25-34, 35-44, 45-54, and 55+.

⁵⁰ The majority of Singaporean respondents in the age group 25-34 and the majority of Brazilian respondents in the age group 35-44 who have used a search engine more than once in the last four weeks also choose the correct answer (52% and 53%, respectively). These are the only incidences of the majority of respondents in an age group other than 18-24 correctly answering this question.

⁵¹ This is the case except for Brazil, where having a PhD makes a significant difference: 80% Brazilian consumers with a PhD or equivalent degree correctly identify how a search engine ranks results compared to 37% of all Brazilian respondents. It should be noted that the survey countries do not have the exact same categories of education levels, so one-to-one comparisons across countries on the basis of respondents' education levels are not possible. That is why no such comparison is made here: the link between the respondents' highest education level and responses are considered only at the national level.

⁵² In the UK, Ofcom found there to be a correlation between the socio-economic group of UK adults and their critical awareness regarding search engine results (i.e. their content) and the relevance of advertising; see Ofcom, *Adults: Media Use and Attitudes Report 2019*, at 16-18, available at https://www.ofcom.org.uk/data/assets/pdf_file/0021/149124/adults-media-use-and-attitudes-report.pdf. See also Ofcom, *Adults' Media Use and Attitudes Report 2020 – June 2020, Fieldwork*, at 89, 149-151, available at https://www.ofcom.org.uk/data/assets/pdf_file/0033/196458/adults-media-use-and-attitudes-2020-full-chart-pack.pdf. The empirical study underlying the current piece did not find a correlation between the 'household income' or the 'employment status' of UK respondents and the incidence of their correctly answering the questions regarding search engine funding or ranking of results. Such a correlation also has not been found between the respondents' 'highest education level' and the said incidence. However, it is possible that Ofcom's 'socio-economic group' metrics differ from (or are a combined measure of) 'household income', 'employment status' and 'education level', which the current study considers as separate factors. Due to the fact that the way in which these metrics are represented in national statistics vary significantly from one country to another, the current study does not use these to derive results given the international nature of the study since the comparisons would not be meaningful as a result of the underlying comparators' being different.

companies are. Trust is necessary for maximising the benefits that can be realised from the platform economy as the appeal of platforms depends, *inter alia*, on trust in platform providers.⁵³ Consumers were separately also asked about their views on the ‘big tech’ because this group of companies provides many of the most popular platform services that are subject to scrutiny around the world. Consumer sentiments towards the ‘big tech’, their business practices and the state of competition can provide insights into potential public support for proposals to amend and/or introduce competition laws, policies and regulations in the relevant markets.⁵⁴

Out of a list of nine institutions and organisations, technology companies were the second most trustworthy, with 37% of respondents saying that technology companies are either ‘trustworthy’ or ‘very trustworthy’ (Figure 16). The government is the most likely to be actively considered untrustworthy, with nearly four out of ten respondents saying that the government is either ‘untrustworthy’ or ‘very untrustworthy’ (38%).

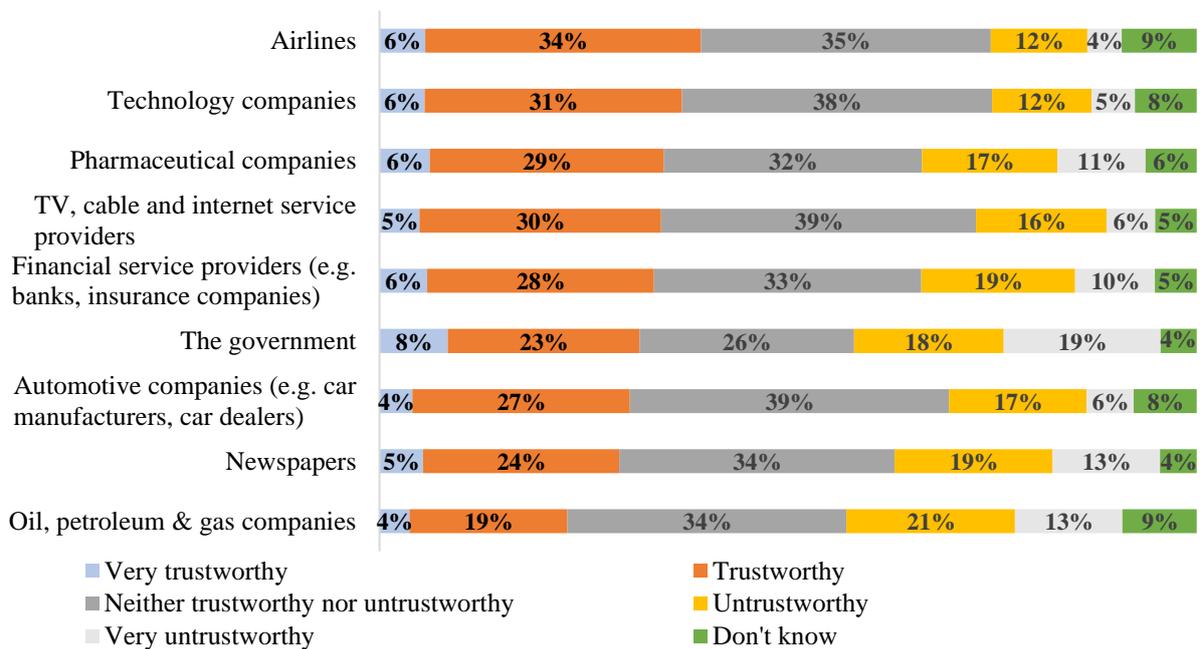


Figure 16. Trustworthiness of different institutions or organisations (Base: all respondents, n= 11,151) (Q: Please tell us how trustworthy or untrustworthy, in your opinion, the following institutions/organisations generally are.)

Consumers in Brazil are the most likely to find technology companies to be overall trustworthy (63%), whilst consumers in the UK and the US are the most likely to consider them overall untrustworthy (29% each). The majority of Italian and Indian consumers find technology companies overall trustworthy (52% and 51%, respectively). The majority of consumers in the UK, US, France, and Brazil find the government overall untrustworthy (52%, 54%, 53%, 55%, respectively), whilst the majority of Chinese and Singaporean consumers find the government overall trustworthy (63% and 51%, respectively). Those in the age group 25-

⁵³ This applies to both consumers of platform services (e.g. for data protection reasons) and business users of platform services (e.g. for app developers or content providers when it comes to platform competition). See Mark de Reuver, Carsten Sørensen and Rahul C. Basole, *The Digital Platform: A Research Agenda*, 33 J. INFO. TECH. 124, 130 (2018) for a discussion of trust in the context of platform design.

⁵⁴ The survey was structured such that these questions on trustworthiness and the big tech were asked *before* the questions regarding the funding and data collection practices of platforms in order to ensure that the survey itself did not bias the respondents due to the language used in the latter set of questions which included words such as ‘creepy’, ‘intrusive’, etc.

34 are more likely than any other age group to find technology companies overall trustworthy (40%), whereas those older than 55 are more likely than any other age group to find the government overall untrustworthy (40%).

One question in the survey explored consumers' attitudes specifically towards the 'big tech' companies which were listed in the question as Google, Amazon, Facebook, Microsoft, and Apple. Regarding the big tech, nearly three fifths of respondents opine that these companies are 'so big and powerful that there should be a special public authority to keep them under scrutiny' (59%). The majority of respondents thinks that the big tech are 'the source of much innovation that improves lives and are mostly a source of good' (54%) and nearly half agree that 'they provide so many useful and high-quality products and services to consumers' that consumers are happy with their overall business practices (47%). There is no clear sentiment as to whether consumers think that the big tech should be broken up, with 30% disagreeing and 29% agreeing with this position.

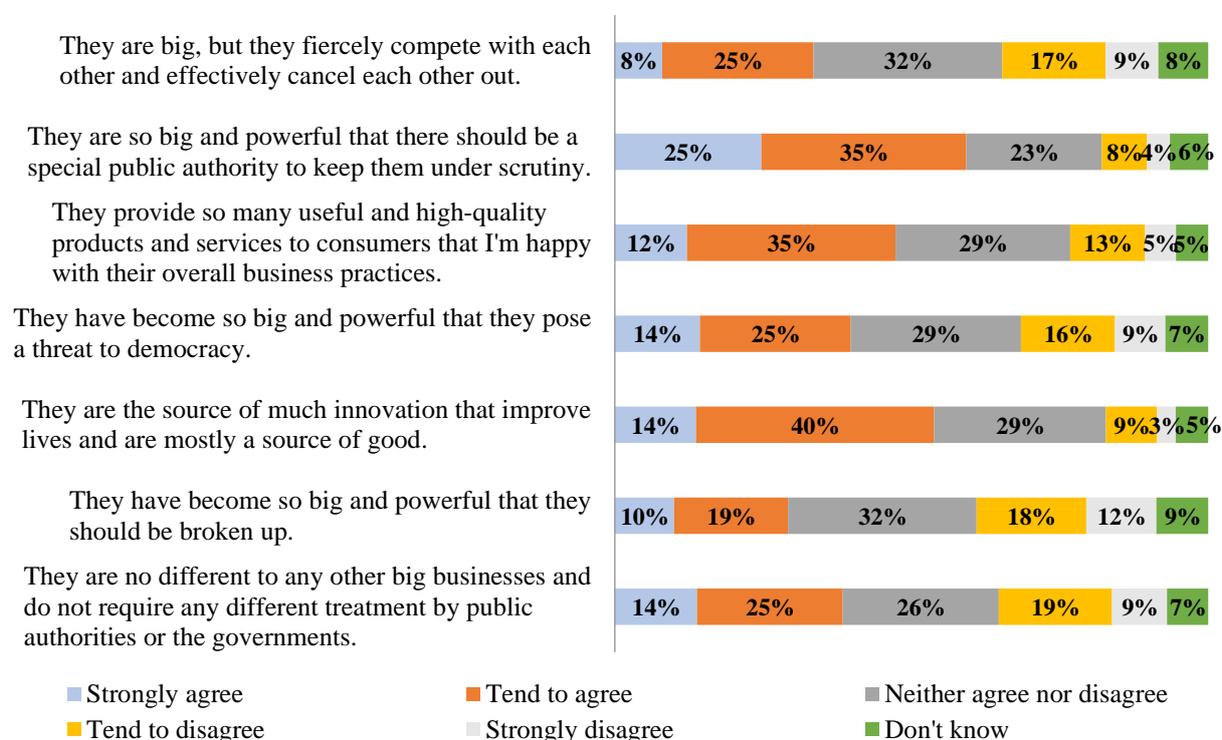


Figure 17. Attitudes towards 'big tech' companies (Base: all respondents, n= 11,151) (Q: For the following question, please think about the 'big tech' companies: Google, Amazon, Facebook, Microsoft, Apple. To what extent do you agree or disagree with the following statements?)

UK consumers are the most likely to agree with the statement that there should be a special public authority to keep the big tech under scrutiny (67%), whereas US consumers are the least likely to do so (52%).⁵⁵ Indian and Brazilian consumers are the most likely to say that, overall, they are happy with the practices of the big tech (67% each). UK consumers are the most likely to think that the big tech have become so big and powerful that they pose a threat to democracy (49%), followed closely by those in the US and France (48% each). Interestingly,

⁵⁵ This finding is in line with other empirical research in the UK which similarly found that 64% of respondents think that the government should regulate all online services more heavily; see Doteveryone, *People, Power and Technology: The 2020 Digital Attitudes Report*, at 11, available at https://doteveryone.org.uk/wp-content/uploads/2020/05/PPT-2020_Soft-Copy.pdf.

American consumers are more likely than any others to agree with the statement that the big tech should be broken up (36%), whilst Brazilian consumers are the most likely to disagree with this (54%), followed closely by Italian consumers (51%).

e. Value of ‘free’ platform services for consumers, and platform competition

The survey included a thought experiment to gauge consumers’ willingness to pay (WTP) for platform services that are currently free of charge to use and their willingness to accept (WTA) monetary payments to forgo these services. The objectives of the exercise were: first, to establish an indicative value of some popular platform services for consumers; second, to gather further evidence on whether consumers may be willing to pay for services that are currently free, given that they express unease with the data collection of free, advertising-funded platform services; and, third, to understand which (if any) platforms consumers perceive as competitors (i.e. offering substitutes to one another) and may switch to in case of a price increase by a currently-free platform. This third aspect is particularly relevant to the competition analysis, which traditionally focuses on the question of which other products/services consumers would switch to if the price of the product/service under scrutiny increases.⁵⁶ Although the fact that the relevant platform services are currently free of charge may lead to stronger adverse reactions on the part of consumers than would be the case for a price increase where the base price is not zero, this exercise can still shed light on *which* platforms consumers view as substitutes to one another.⁵⁷ The thought experiment was also expected to provide some indication of the presence or absence of an ‘endowment effect’, namely the potential difference between consumers’ WTP and WTA regarding platform services.⁵⁸

For the thought experiment, two alternative scenarios were presented to the respondents. The scenarios related to consumers’ being offered payment in return for losing access to a platform and consumers’ being required to pay a monthly fee to keep access to the

⁵⁶ In traditional competition analysis, this is known as the Small-but-Significant-Non-transitory-Increase-in-Price (SSNIP) test which is used in defining the market for the subsequent assessment of market power. The SSNIP test (also known as the ‘hypothetical monopolist test’) involves establishing whether a hypothetical monopolist could profitably impose a ‘significant and non-transitory increase in price’ (usually in the range of 5-10%) over the products/services in question. If such an increase is profitable, then the products/services in question are in a ‘relevant market’ for competition law purposes. *See e.g.*, see the US DOJ/FTC, *Horizontal Merger Guidelines*, 2010, ¶¶ 4.1.1-4.1.3, available at <https://www.justice.gov/atr/horizontal-merger-guidelines-08192010>. As there is no extant price to use in many of the online platform markets that have come under scrutiny due to the fact that they provide their services free of charge to consumers, the SSNIP test is not useful for defining the markets in such markets. Commentators have proposed to use instead, for example, a change in quality; *see e.g.*, Lapo Filistrucchi, *Market Definition in Multi-Sided Markets*, in OECD RETHINKING ANTITRUST TOOLS FOR MULTI-SIDED PLATFORMS 47-49 (2018). It should also be noted that a price increase from a positive price is likely to be viewed differently by consumers from a price increase (ie the imposition of a positive price) for services that are currently provided for ‘free’. This is known as the ‘free effect’ or the ‘zero price effect’. For a discussion in the context of platforms, *see* Michal S. Gal and Daniel L. Rubinfeld, *The Hidden Costs of Free Goods: Implications for Antitrust Enforcement*, 80 ANTITRUST L.J. 521, 528-531 (2016).

⁵⁷ On the relevance of the base price being zero as opposed to a positive price for consumer reactions, *see e.g.*, Gal and Rubinfeld, *id.* at 530; David S. Evans, *Attention Rivalry among Online Platforms*, 9 (2) J. COMPETITION L. & ECON. 313, 331-333 (2013).

⁵⁸ The ‘endowment effect’ refers to the observation that people often demand much more to give up an object than they would be willing to pay to acquire it; *see* Daniel Kahneman, Jack L. Knetsch, and Richard H. Thaler, *The Endowment Effect, Loss Aversion, and Status Quo Bias*, 5 (1) J. ECON. PERSP. 193, 194 (1991). The endowment effect and the ‘status quo bias’ are manifestations of an asymmetry of value called ‘loss aversion’: namely, that ‘the disutility of giving up an object is greater than the utility associated with acquiring it’; *id.* The ‘status quo bias’ as a reflection of loss aversion implies that ‘individuals have a strong tendency to remain at the status quo, because the disadvantages of leaving it loom larger than advantages’; *id.* at 197-198.

same platform. Consumers were asked about their preferences regarding both scenarios. The survey was designed to ensure that these two scenarios were not presented one after another, but at different points in the survey. The respondents were presented these two scenarios with regard to their ‘preferred search engine’ in all countries and Sina Weibo in China and Facebook in all other survey countries. The search engine scenarios were posed to all consumers who said that they used a search engine in the last five years. The Facebook/Sina Weibo scenarios were posed to all consumers who said that they used Facebook/Sina Weibo more than once in the last four weeks.

The results show that the majority of search engine users (52%) positively values the service offered by their preferred search engine and over two fifths of Facebook/Sina Weibo users (46%) positively value Facebook/Sina Weibo as they reportedly prefer to keep access to these platforms and not receive any payment (Figure 18). Yet, as discussed below,⁵⁹ around 80% of the same group of consumers would categorically *not* pay to use either their preferred search engine or Facebook/Sina Weibo if the platforms started charging a small monthly fee for their services (equal to *half* the amount offered to and declined by consumers to forgo access to the same). The details of the thought experiment were as follows.

In the first scenario, consumers were asked whether they would rather keep access to their preferred online platforms or lose access and receive \$10 (or local equivalent) per month, which is roughly equal to the cost of two McDonald’s meals in their country of residence.⁶⁰ When presented with this scenario in relation to Facebook/Sina Weibo, nearly half of all respondents prefer to keep access and not receive any payment (46%). Thus, access to these platforms must be worth more than \$10 (or local equivalent) to these respondents per month, assuming that they are ‘rational’, as defined by standard economics theory.⁶¹ A slightly lower proportion of respondents would prefer to receive the monthly payment and lose access to the relevant social media network (42%). Respondents in the UK are the most likely to prefer the monthly payment over keeping access to Facebook (48%), while the majority of Chinese respondents wants to maintain access to Sina Weibo (57%).

When this scenario was presented with reference to consumers’ preferred search engine, just over half reported to prefer keeping access and not receiving any payment (52%). Thus, accessing their preferred search engine must be worth more than \$10 (or local equivalent) per month to the majority of these respondents, again assuming that they are ‘rational’. Around

⁵⁹ See text around *infra* note 62.

⁶⁰ The cost of two McDonald’s meals in the survey country was used as the benchmark as this appeared to provide the most standard valuation of a product that is commonly available in the survey countries with a relatively fixed value in relation to cost of living. Numbeo (arguably the world’s largest database for cost of living) was used for the purpose of establishing the costs of different items in comparison to cost of living; see <https://www.numbeo.com/cost-of-living/>. The values used in these questions were also checked and confirmed with the YouGov local teams in each survey country to ensure that they represent roughly the same value across the survey countries. The monetary values used in different survey countries were as follows: £10 (UK); €10 (Germany); €10 (France); €10 (Italy); \$10 (US); A\$20 (Australia); S\$20 (Singapore); ₹500 (India); ¥70 (China); R\$50 (Brazil).

⁶¹ Standard economics theory is built upon the premise that most behaviour ‘can be explained by assuming that agents have stable, well-defined preferences and make rational choices consistent with those preferences in markets that (eventually) clear’; Kahneman, Knetsch and Thaler, *supra* note 58, at 193. Whereas behavioural economists have criticised standard economics theory of the consumer for combining the positive and the normative due to its being based on a (normative) rational maximising model whilst being used also to describe consumer behaviour (positive), other commentators associated with rational-choice economics argue that this critique is unwarranted at least in the context of the economic analysis of the law; cf. Richard Thaler, *Toward a Positive Theory of Consumer Choice*, 1 J. ECON. BEHAV. & ORG. 39, 39-40 (1980) and Richard A. Posner, *Rational Choice, Behavioral Economics, and the Law*, 50 (5) STAN. L. REV. 1551, 1552 (1998).

a third would prefer to receive a monthly payment and lose access to their preferred search engine (32%). Consumers in the UK and in Italy are the most likely to prefer the monthly payment and lose access to their preferred search engine (36% each). Respondents in China and in Germany are the most likely to want to keep access to their preferred search engine and not receive any money (56% each).

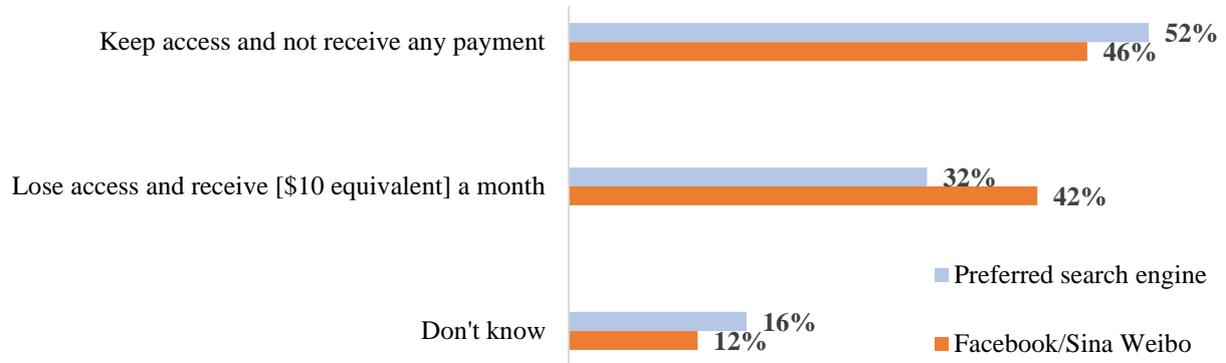


Figure 18. Preference to keep access to platform service or receive a monthly payment to forgo access (Base: all who used a search engine in the last 5 years, n = 10,845/all who used Facebook/Sina Weibo more than once in the last 4 weeks, n= 6,814) (Q: Would you rather keep access to [your preferred search engine/Facebook/Sina Weibo] or lose access to it in return for a [\$10 equivalent] monthly payment to be made to you for each month you don't access [that search engine/it]?)

When the scenario presented to the respondents was reversed and consumers were asked about what they would do if their preferred search engine or Facebook/Sina Weibo started charging a \$5 (or local equivalent) monthly fee for their services, roughly eight out of ten consumers reported that they would *not* pay to continue using these platform services (Figure 19). In other words, eight out of ten consumers would not pay as much as the cost of one McDonald's meal a month to maintain access to their preferred search engine or the social network that they regularly use. The vast majority of respondents would use another provider that does not charge for its services, instead.

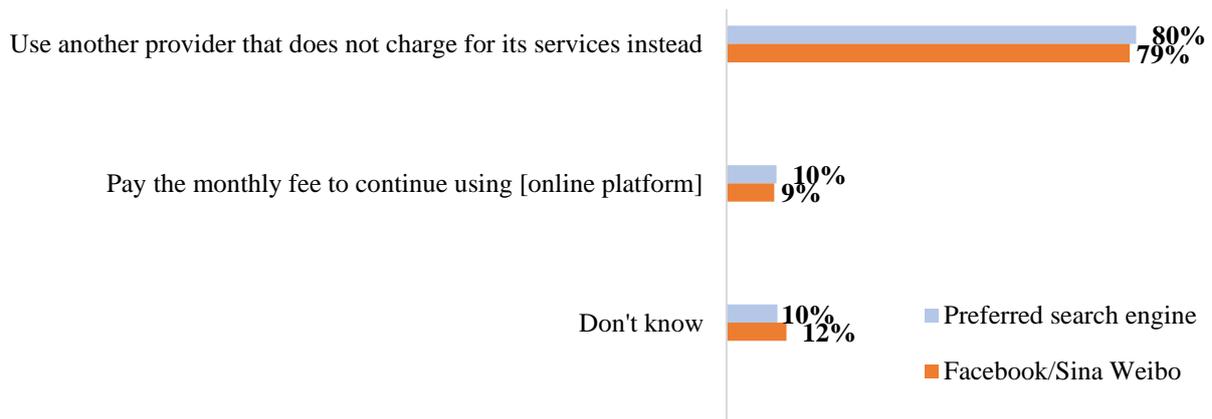


Figure 19. Preference to pay a monthly fee to continue using service or use another provider (Base: all who used a search engine in the last five years, n= 10,845/all who used Facebook/Sina Weibo more than once in the last four weeks, n= 6,814) (Q: If [your preferred search engine/Facebook/Sina Weibo] started charging a [\$5 equivalent] monthly fee to use the search engine and all else remains the same, which of the following would be your most likely reaction?)

Regarding Facebook/Sina Weibo, fewer than one in ten respondents said that they would pay the monthly fee to continue using the service (9%). The vast majority of respondents

would use another provider that does not charge for its services (79%). Consumers in India are the most likely to pay the monthly fee and continue using Facebook (19%), while Singaporean consumers are the most likely to use another provider instead (84%). One in ten Chinese consumers would prefer to keep access and pay the monthly for Sina Weibo, whilst one in ten American consumers would do so for Facebook (10% each). The age group of respondents does not appear to make an important difference to the preference to pay a monthly fee for continued access to Facebook/Sina Weibo.⁶² The household income band of respondents does not appear to make any difference to respondents' WTP for Facebook/Sina Weibo, either, in the countries for which the dataset includes this information (i.e. all bar Brazil).

When asked with reference to their preferred search engine, the results are very similar – one in ten would pay the monthly fee to continue using the search engine (10%) and eight out of ten would find another provider that does not charge (80%). In this scenario, Indian consumers are still the most likely to pay the monthly fee (24%), while UK consumers are the most likely to use another provider that does not charge a fee rather than pay for their preferred search engine (88%). The age group of respondents appears to make some difference to the preference to pay a monthly fee for continued access to consumers' preferred search engine with those aged 25-34 being more willing to pay than any others (15%).⁶³ The household income band of respondents does not appear to make any difference to respondents' WTP for their preferred search engine in the countries for which the dataset includes this information (i.e. all bar Brazil).

These results suggest that consumers believe that there are alternatives to their preferred search engine and to Facebook/Sina Weibo. They also suggest that there is not much brand loyalty when it comes to platform users' preferred search engine or the social network which they regularly use *provided* that there are alternative free-to-use options: only around one in ten would pay a monetary price for continued access to these platform services. The endowment effect is at least in the range of 1:2 and possibly much stronger: the vast majority of consumers appears to be willing to pay nothing (i.e. zero) for access to a service which around a majority says has positive economic value to them (i.e. that they would *not* accept \$10 (or local equivalent) a month to lose access to it), so long as they can access a similar service free of charge.

The respondents who said that they would use another provider instead of paying for their preferred search engine or Facebook/Sina Weibo were further asked to state (in open text) which other provider they would use, with a view to understanding which platforms consumers view as substitutes, and thus, competitors to these platforms. This inquiry also aimed to test whether consumers who said that they would use another provider instead did, indeed, know about any other platforms offering similar services.

With respect to Facebook/Sina Weibo, the majority of those who said they would use another platform did not know which other provider they would use instead if Facebook/Sina Weibo started charging a fee (62%).⁶⁴ Of the remaining responses, the most common

⁶² The overall proportions of respondents saying that they would pay the monthly fee to continue using Facebook/Sina Weibo are distributed as follows: age group 18-24, 11%; 25-34, 11%; 35-44, 10%; 45-54, 8%; and 55+, 8%.

⁶³ The overall proportions of respondents saying that they would pay the monthly fee to continue using their preferred search engine are distributed as follows: age group 18-24, 13%; 25-34, 15%; 35-44, 11%; 45-54, 8%; and 55+, 5%.

⁶⁴ The consumers had to enter a text response or choose 'I don't know' when answering this question before they could move on to the next question. Those who chose to enter text could write whatever they wanted in the text box provided (which was one line in length) and many have entered the name of more than one platform and other

occurrence is for consumers to enter the name of different social media platforms and some messaging platforms. The most frequent platform name consumers entered as the alternative provider they would use if Facebook/Sina Weibo started charging a fee is Instagram, followed by Twitter and WhatsApp. Notably, nearly one in four respondents who entered the name of an alternative provider mentioned Instagram as the platform they would switch to.⁶⁵ Both Instagram and WhatsApp are owned by Facebook, and Facebook's acquisition of both has come under great scrutiny in retrospect.⁶⁶ It is, however, also noteworthy that Twitter is the second most-often mentioned alternative by respondents in this context, in contrast to recent competition enforcement actions or studies which have not considered Twitter to be in the same 'relevant market' as Facebook.⁶⁷

With respect to their preferred search engine, again, the majority of those who said that they would use another platform did not know which other provider they would use (59%).⁶⁸ The majority of the remaining responses mentioned different search engine brands.⁶⁹ Some remaining responses named, in particular, brands of internet browsers and other types of platforms as alternative providers to the respondents' preferred search engine. Of particular note is that more than one in ten respondents who said that they would use another platform have provided the name of an *internet browser* as an alternative to their preferred search engine.⁷⁰ The implications of this apparent confusion for the effectiveness of competition in the relevant markets is discussed below.⁷¹

IV. Analysis of the Insights from the Empirical Findings, and Implications and Recommendations

This section aims to articulate the most important implications of the empirical insights arising from the findings presented in Section III for competition law, policy, and regulation in online platform markets. The empirical findings suggest that competition in platform markets may be effective in some aspects, but ineffective in other aspects when one considers, holistically, the relevant features of the consumer demand side. Compared against the empirical findings, contemporary policymaking contains questionable *general assumptions* about certain features of the consumer demand side, whilst suffering from *blind spots* due to its inattention to other features of the same. This Section first explains and analyses the insights from the empirical

text providing explanations. Thus, the counts of how many times a given platform has been mentioned in open text are not the same as the number of respondents who mentioned that platform. As many respondents have entered text some of which contain typos and some of which contain acronyms, abbreviations, etc., the figures provided in this and the next paragraph regarding textual counts should be taken as estimates and not absolute counts.

⁶⁵ Around 37% of those who entered the name of a platform mentioned Instagram.

⁶⁶ Facebook's acquisition of Instagram has particularly been subject to criticism as an example of an acquisition that should not have been allowed to go ahead by competition authorities. At the time of writing, the US Federal Trade Commission (FTC) is seeking in a legal action, *inter alia*, the divestiture/reconstruction of Facebook's business operations to remedy the allegedly anticompetitive acquisition of Instagram and WhatsApp by Facebook; see Federal Trade Commission v. Facebook, Inc. Case No.: 1:20-cv-03590, available at https://www.ftc.gov/system/files/documents/cases/051_2021.01.21_revised_partially_redacted_complaint.pdf.

⁶⁷ See e.g., Bundeskartellamt, *Facebook*, *supra* note 19, ¶ 264, ¶¶ 307-308, ¶¶ 319-327. Twitter is mentioned in around 17% of the textual responses.

⁶⁸ The consumers had to enter a text response or choose 'I don't know' when answering this question before they could move on to the next question. See text to n 64 for the limitations of the findings in this paragraph.

⁶⁹ In the order of frequency, these are Bing, Yahoo, Google, DuckDuckGo, and Ecosia.

⁷⁰ Around 12% of the textual responses mention the name of a web browser as an alternative provider to consumers' preferred search engine.

⁷¹ See text to *infra* note 154.

findings. It then elaborates on the policy implications of these insights and makes recommendations to improve extant legal, policy and regulatory approaches, based on the insights.

a. The Insights

The first important insight indicating that competition may be effective in some aspects of platform markets relates to reported patterns of platform use by consumers, which reveal that multi-homing is common and switching is not uncommon across most platform services that the respondents were asked about. Multi-homing and switching are both relevant to the effectiveness of competition in digital markets. On multi-sided markets, the extent of multi-homing by customers on each side of the market is, in fact, a key parameter of competition.⁷² This is because multi-sided markets with network externalities – such as the markets in which the online platforms studied in the current piece operate – may be less prone to ‘tipping’ to one provider where competing platforms have differentiated offerings and customers of platforms multi-home.⁷³ By single-homing, consumers create entrenched market power in platform markets, which means that multi-homing is key to encouraging competition.⁷⁴ In fact, multi-homing by consumers can be the ‘antidote’ to strong network effects in platform markets.⁷⁵ The extent of switching and switching costs are also relevant to competition; such costs can create barriers to entry and expansion, and can establish or strengthen the position of market power if there is a first-mover advantage.⁷⁶

⁷² Kate Collyer, Hugh Mullan and Natalie Timan, *Measuring Market Power in Multi-Sided Markets, Note for OECD Hearing on Re-thinking the Use of Traditional Antitrust Enforcement Tools in Multi-Sided Markets*, 21-23 June 2017, 3, available at [https://one.oecd.org/document/DAF/COMP/WD\(2017\)35/FINAL/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2017)35/FINAL/en/pdf). See also David S. Evans and Richard Schmalensee, *The Antitrust Analysis of Multi-Sided Platform Businesses*, in *THE OXFORD HANDBOOK OF INTERNATIONAL ANTITRUST ECONOMICS*, VOL. 1, 417-418 (Roger D. Blair and D. Daniel Sokol eds., 2015).

⁷³ Collyer, Mullan and Timan, *id.*, at 4. ‘Network externalities’ or ‘network effects’ can be either ‘direct’ or ‘indirect’. ‘Direct network effects’ exist where the adoption of a product/service by different users is complementary, so that each user’s adoption payoff, and his/her incentive to adopt, increases as more others adopt that product/service; see Joseph Farrell and Paul Klemperer, *Coordination and Lock-In: Competition With Switching Costs and Network Effects*, in *HANDBOOK OF INDUSTRIAL ORGANIZATION*, VOL. 3, 1974 (Mark Armstrong and Robert Porter eds., 2007). ‘Indirect network effects’ arise through improved opportunities to trade with the other side of a market and are essentially equivalent to economies of scale; *id.* Indirect network externalities are an important feature of multi-sided markets and mean that the benefit that ‘one side of the market derives from being on the platform depends on the number of customers on the other side of the market, and vice versa’; Collyer, Mullan and Timan, *id.*, 2. ‘Market tipping’, a phenomenon particularly relevant to network markets, refers to the ‘fact that when there are competing systems, once a system manages to gain a certain advantage in consumers preferences, then it might become more and more popular ... and its rivals might fade out’; Massimo Motta, *COMPETITION POLICY: THEORY AND PRACTICE* 84 (2004).

⁷⁴ Stigler Center Report, *supra* note 4, 20. Competitive prices on one side of the market depends on the extent of multi-homing on the other side of the market as a platform tries to lure multi-homing users to an exclusive relationship by offering better prices, etc; see Jean-Charles Rochet and Jean Tirole, *Platform Competition in Two-Sided Markets*, 1(4) J. EUR. ECON. ASS’N 990, 993 (2003). For a theoretical model on the price and surplus effects of multihoming on platforms, see Paul Belleflamme and Martin Peitz, *Platform Competition: Who Benefits from Multihoming?*, 64 INT’L J. INDUS. ORG. 1 (2019).

⁷⁵ See Furman et al, *supra* note 4, ¶ 1.88; Cremer, de Montjoye and Schweitzer, *supra* note 4, 49. The Furman Report also notes that the report also remarks that ‘consumers in digital markets display strong preferences for default options and loyalty to brands they know’; Furman et al, *supra* note 4, ¶ 1.87. Although no particular empirical point of reference is provided for the said preferences of consumers, the Report relates its statement to the ‘value of default roles in digital markets’, which according to the Report is evidenced by Google’s agreement to reportedly pay \$1 billion to Apple to be the default search engine on the iPhone; *id.* ¶ 1.87.

⁷⁶ Collyer, Mullan and Timan, *supra* note 72, 10. ‘Switching costs’ arise where a buyer purchases a product repeatedly and finds it costly to switch from one seller to another; Joseph Farrell and Paul Klemperer, *Coordination and Lock-In: Competition With Switching Costs and Network Effects*, in *HANDBOOK OF INDUSTRIAL*

The empirical findings of the current study show that although the incidence and degree of multi-homing varies across platform services and across countries, multi-homing exists on average for every platform type that consumers were asked about in every survey country. Further, multi-homing is reportedly practised by the majority of consumers in every survey country for search engines, communications/messaging, online marketplaces/e-commerce platforms, and all survey countries bar one (France) for social/professional networking. Further empirical and theoretical research is necessary to establish whether the reported levels of multi-homing are of sufficient magnitude to outweigh the potential tipping concerns regarding the different platform services in question and to confirm that the reported multi-homing is of the type that reflects effective competition between platform services (i.e. multi-homing across *substitute* platforms).⁷⁷ What is clear from the empirical findings is that *general assumptions* of an absence of multi-homing by users across the range of different platform services are not tenable.

A related, second insight is that in addition to multi-homing, non-trivial numbers of consumers surveyed (nearly 40% of respondents) have reportedly made a decision to stop using a platform in the last two years. Reasons for switching platforms include a concern with the platform's terms of use or data and privacy policies or another platform's offering a better-quality service. For those users who did not decide to stop using a platform, the most common reason is contentment with the quality and price of the service offered by the platforms that they use. Smaller numbers of respondents also cite concerns with losing access to data if they stop using a platform and report not being aware of other platforms offering the same service. Although some of the reasons provided for no longer using some platforms are disconcerting in themselves, if consumers are moving away from those platforms as they report, this implies that competitors offering a higher quality service or a better price or more choice than incumbents should be able to build and grow a user base *if* entry or expansion remains possible. Once again, the empirical findings suggest that *general assumptions* of an absence of switching by users across the range of different platform services are not tenable.

Another key issue regarding current competition enforcement and policy activity in digital markets relates to the prevalence and implications of defaults set by providers of online platforms regarding certain settings, such as those relating to privacy/data collection or default choices for search engines, internet browsers, etc. Behavioural economics demonstrates that the way in which choices are presented to people – ‘choice architecture’ – can have large effects on the choices that people make.⁷⁸ In the online platform context, a ‘nudge’ to use a particular browser as a default, for example, can entrench the position of that browser.⁷⁹ Similarly, empirical research has identified ‘dark patterns’ used by some websites which exploit cognitive

ORGANIZATION, VOL 3, 1972 (Mark Armstrong and Robert Porter eds., 2007). Switching costs can also arise in the context of follow-on products or services (e.g. repairs) and the buyer finds it costly to switch from the supplier of the original product; *id.* Large switching costs ‘lock in’ a buyer once he/she makes an initial purchase; *id.*

⁷⁷ It has been argued in the literature that for multi-homing to be an effective competitive constraint, users have to be using different platforms as substitutes to one another rather than as complements; *see e.g.*, Sebastien Wismer and Arno Rasek, *Market Definition in Multi-Sided Markets*, in OECD RETHINKING ANTITRUST TOOLS FOR MULTI-SIDED PLATFORMS 60-62 (2018). ¶¶ See also Bundeskartellamt *Facebook*, *supra* note 19, ¶¶ 284, 457; and Bundeskartellamt, *Market Power of Platforms and Networks*, Working Paper, June 2016, 56-65, available at https://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Berichte/Think-Tank-Bericht-Langfassung.pdf?__blob=publicationFile&v=2.

⁷⁸ *See* Richard H. Thaler, *From Cashews to Nudges: The Evolution of Behavioral Economics*, 108 (6) AM. ECON. REV. 1265, 1283 (2018). In the context of platform competition, *see also* Evangelos Katsamakos and Heba Madany, *Effects of User Cognitive Biases on Platform Competition*, 28 (2) J. DECISION SYSTEMS 138, 159 (2019).

⁷⁹ Stigler Center Report, *supra* note 4, 20.

biases of consumers such as default and framing effects.⁸⁰ The importance and relevance of defaults to competition in online platform markets have, indeed, received substantial attention from authorities recently, as discussed below.⁸¹

Against that backdrop, the third insight from the empirical study regarding how consumers use and engage with platforms, indeed, relates to default settings: the majority of platform users in every survey country reports changing all the default settings that they were asked about at some level of frequency. In users' engagement with defaults, changing the privacy/data collection settings and permissions of a platform/app is the most common (with the lowest ratio being nearly three quarters of users in France), followed by changing cookie settings when browsing the internet. What may be surprising is that there appears to be no clear indication of consumers' reported behaviours' of changing the default privacy/data collection settings and permissions being affected by the extant data protection regime in their country. This suggests that consumers' valuations of privacy and their data may *not* be endogenous to the existing legal regime, in contrast to some suggestions in the literature to that effect.⁸² For example, consumers in European countries where the General Data Protection Regulation (GDPR)⁸³ applies such as Italy and the UK and consumers in Australia and the US where such extensive general data protection legislation does not apply are equally likely to change the defaults for privacy/data collection settings and permissions (83% and 80%, respectively). Perhaps most interestingly, consumers in China are more likely than those in any other country to change the privacy/data collection settings and permissions of a platform/app (93%). Further, in contrast to propositions in the literature that there may be a 'privacy paradox', the empirical findings suggest that platform users *do* seem to take action to protect their privacy when online, assuming that this is why they change the default privacy/data collections of platforms and apps – and more than they change other defaults.⁸⁴ When it comes to other default settings, although on average, there is a lower incidence of changing the initial default

⁸⁰ See e.g., Arunesh Mathur et al, *Dark Patterns at Scale: Findings from a Crawl of 11K Shopping Websites*, 3 (CSCW) PROC. ACM HUM.- COMPUT. INTERACT, Article 81 (2019) finding such dark patterns on shopping websites. 'Dark patterns' are user interface design choices made by an online service provider which benefit the online service by coercing, steering or deceiving users to make decisions that they may not make if they were fully informed and capable of selecting alternatives; see *id.* at 81:2.

⁸¹ See text around *infra* note 123.

⁸² See e.g. Winegar and Sunstein who suggest that consumer valuation of privacy appears to be endogenous to the existing legal regime; Angela G. Winegar and Cass R. Sunstein, *How Much Is Data Privacy Worth? A Preliminary Investigation*, 42 J. CONSUMER POL'Y 425, 432, 434 (2019). According to the authors, the better privacy is protected, the more highly individuals value it, and the more highly valued it is, the better it is protected, and so on; *id.* at 434. However, they also remark that surveys – such as the one underlying the current piece – would be valuable to explore potential international differences and compare, for example, the approach in the US with that in the EU and China; *id.* 434.

⁸³ Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) 2016 O.J. (L 119) 1.

⁸⁴ The 'privacy paradox' refers to the '[a]pparent dichotomy between privacy attitudes, privacy intentions, and actual privacy behaviors'; Alessandro Acquisti, Curtis Taylor and Liad Wagman, *The Economics of Privacy*, 54 (2) J. ECON. LIT. 442, 476 (2016). It has been noted in the literature that the purported dichotomy, the paradox, is likely the result of several factors including the decision-making hurdles consumers face when dealing with privacy challenges, particularly online, such as asymmetric information, bounded rationality and various heuristics; see *id.* at 477. Thus, digital literacy potentially plays a role in the context of privacy/data protection choices made by consumers, too. The authors who coined the term 'privacy paradox' posit that the dichotomy between people's intentions to disclose (i.e. willingness to provide personal information) and actual disclosure behavior is explained by the former's being influenced by risk and the latter's being driven by trust (or a trust heuristic); see Patricia A. Norberg, Daniel R. Horne and David A. Horne, *The Privacy Paradox: Personal Information Disclosure Intentions versus Behaviors*, 41 (1) J. CONSUMER AFF. 100, 104-105 (2007).

search engine or the initial default internet browser on the consumer's device than other defaults, substantial numbers of users – over 60% – in every survey country report changing these defaults, too. Around one in three platform users report to 'always' or 'often' change the defaults for the four default settings they were asked about (28-32%). Around one in four users report to 'never' change the initial default search engine or the initial default internet browser on their device (26% and 25%, respectively). These findings together suggest that it cannot be *generally assumed* that all relevant defaults are 'sticky' (i.e. not changed by users) and/or 'sticky' to the same extent. The policy implications of this are discussed below.⁸⁵

The fourth empirical insight concerns perceived choice and quality of online platform services. Alongside price and innovation, quality and choice are two main parameters of competition and components of the analysis by competition enforcers, *inter alia*, of market power and its anticompetitive use.⁸⁶ The majority of users of all platforms bar one (ride-hailing/transport platforms) reports a high quality ('very high' or 'fairly high') experience with different platform services. The majority of users of all platforms bar two (ride-hailing/transport platforms and app stores) reports 'a lot' of or a 'fair amount' of choice when it comes to their ability to pick between different platforms for the relevant services. Similarly, the majority of users of all platform services reports a positive impact on their general well-being or quality of life from using the platforms. The reports of a negative impact on consumers' general well-being or quality of life and of a low quality of experience coincide in the case of social/professional networking, but by a small minority of respondents (under 10%) with some variations across survey countries (e.g. the UK and the US).⁸⁷ Similar to the insights relating to multi-homing, switching, and defaults, the empirical findings suggest that it cannot be *generally assumed* that platform users experience little choice and/or low quality when they use platform services across the range of platform types.

These four sets of insights by and large suggest that competition may be effective in certain aspects of most of the relevant platform markets given the reported features of the demand side, albeit currently assumed *not* to be so by some policymakers, as discussed below.⁸⁸ In contrast, the following sets of insights raise concern about the effectiveness of competition in *other aspects* of these markets. Some of these demand side features currently receive little to no attention from policymakers, regulators and enforcers, potentially leading to blind spots, as discussed below.⁸⁹

⁸⁵ See text around *infra* note 123.

⁸⁶ See e.g., EU Commission Guidance, *supra* note 6, ¶¶ 5-6 where the EU Commission explains that '[c]onsumers benefit from competition through lower prices, better quality and a wider choice of new or improved goods and services', *id.* at ¶ 5 and that '[t]he emphasis of the Commission's enforcement activity in relation to exclusionary conduct is on safeguarding the competitive process in the internal market and ensuring that undertakings which hold a dominant position do not exclude their competitors by other means than competing on the merits of the products or services they provide. In doing so the Commission is mindful that what really matters is protecting an effective competitive process and not simply protecting competitors. This may well mean that competitors who deliver less to consumers in terms of price, choice, quality and innovation will leave the market', *id.* at ¶ 6.

⁸⁷ See also other empirical research which found in a field experiment that stopping use of Facebook by one week leads to 'large short-term reduction in feelings of depression when restricted from Facebook, especially for men', but 'no significant effect of using Facebook on overall life satisfaction'; see Roberto Mosquera et al, *The Economic Effects of Facebook*, 23 EXPERIMENTAL ECON. 575, 578 (2020). For another experimental study which found small but significant improvements in subjective assessments of well-being of Facebook users who deactivated their accounts for four weeks, see Hunt Allcott et al, *The Welfare Effects of Social Media*, 110 (3) AM. ECON. REV. 629 (2020).

⁸⁸ See text around *infra* note 105.

⁸⁹ See text around *infra* note 149.

The fifth important empirical insight relates to digital literacy and to how informed consumers of platform services are. The neoclassical model of ‘perfect competition’ relies on a set of assumptions, one of which is that sellers and buyers on a market have ‘complete and perfect information about all aspects of the market’.⁹⁰ Although both ‘perfect competition’ and ‘monopoly’ are ‘simplified versions of the reality they purport to describe’,⁹¹ well-informed consumers are integral to effective competition in any market.⁹² This is because well-informed consumers can be instrumental in driving vigorous competition between suppliers.⁹³ The findings of the current study show that significant proportions of users of platform services fundamentally lack necessary information and knowledge about certain aspects of these services. This raises the question of the extent to which consumers can drive effective competition in some aspects of these consumer-facing markets where the lack of digital literacy relates to those aspects upon which some consumers base their consumption decisions.

The survey findings indicate that the majority of consumers, all internet users, does *not* know how two of the most widely-used platforms – the Google search engine and the Facebook social network – are provided to them free of charge to use. This includes those who have used these particular platforms more than once recently before completing the survey. The finding is consistent across survey countries; there are only two countries where a small/near majority of users can correctly identify how these two platforms are ‘free’ to use (the UK and Brazil). Overall, nearly one in four consumers professes not to know how these two platforms are funded. This lack of digital literacy is aggravated by the finding that nearly seven out of ten consumers in every survey country do *not* know how a search engine ranks the results that it displays to them when they use a search engine. Again, nearly one in four consumers openly professes to have ‘no idea’ how a search engine ranks results in response to queries. Consumers’ formal education levels appear to have *no* bearing on whether they know how a search engine ranks results, suggesting that ‘digital literacy’ does not necessarily follow from formal education. The age of respondents combined with the recency and frequency of their use of search engines appear as more relevant factors to their level of understanding the basic operations of this universally-used platform service.

The lack of consumer knowledge regarding the operation and funding of basic platform services is further complicated by what appear to be paradoxical consumption preferences. When consumers are actively informed about how some platforms that they regularly use are free of charge because advertisers pay the platform to show their advertisements to users – irrespective of whether the consumers are also informed that the platform collects data on them and their activities to generate revenue through personalised, targeted advertisements – the most common feeling is that consumers do not like the practice, but would not want to pay for any of these services, either (42%-46%). In fact, only a very small minority of consumers would rather pay a fee for some of these services than see advertisements or pay a fee rather than have the platform collect data on them and their activities (7% or 10%, respectively). Then again, the number of those consumers who feel that they ‘get a good deal’ because they do not pay a

⁹⁰ See STEPHEN MARTIN, *INDUSTRIAL ORGANIZATION IN CONTEXT* 18 (2010).

⁹¹ *Id.* at 59.

⁹² See e.g., OECD, *Using Market Studies to Tackle Emerging Competition Issues* 10 (2020), available at <http://www.oecd.org/daf/competition/using-market-studies-to-tackle-emerging-competition-issues-2020.pdf>; UNCTAD, *The Benefit of Competition Policy for Consumers*, Note by the UNCTAD Secretariat, 16-17 (2014), available at https://unctad.org/system/files/official-document/ciclpd27_en.pdf.

⁹³ See Matthew Bennett and Philip Collins, *The Law and Economics of Information Sharing: the Good, the Bad and the Ugly*, 6 (2) EUR. COMPETITION J. 311, 315 (2010). See also Matthew Bennett et al, *What Does Behavioral Economics Mean for Competition Policy?*, 5 (2) COMPETITION POL’Y INT’L 111 (2010).

fee for the platform services that they use goes down by nearly 50% when consumers are *informed* that the services are free *because* platforms collect data on them and their activities (17% down from 30%). Thus, the data collection practices of platforms appear to have *some* significance for *some* consumers which may mean that they are a relevant parameter for *some* consumers when they make consumption decisions about whether to use platform services and if so, which ones to choose. For those consumers at least, their ability to make relevant consumption decisions that are *sufficiently* informed to drive competition on the relevant markets may be impeded by their lack of digital literacy.

Two further points are noteworthy. First, unlike some previous suggestions in the literature,⁹⁴ the findings of the current study illustrate that consumers do *not* prefer personalised, targeted advertisements over non-personalised advertisements *when* they are *informed* that the personalisation and targeting result from data being collected on them and their activities by platforms. Consumer responses show that when advertisements are tailored and personalised using the data collected on them and their activities by the platforms, consumers are averse to this practice by around 50% more than they are averse to advertisements that are not personalised or tailored using data collected on them and their activities.⁹⁵ However, and second, even under the scenario where consumers are explicitly informed that some platforms are free to use as they target users with personalised advertisements based on data collected on them and their activities, only one in ten would rather pay to use these services than have the platform collect data on them and their activities (10%).⁹⁶ As noted above, over four times more consumers express the sentiment that they do not like such data practices, but would not want to pay for any of these services, either (46%).⁹⁷ Thus, the apparent paradox lies in platform users' express preferences for platform services to be free of (personalised, targeted) advertising to exist alongside their express preferences not to pay for the same services, even when they are informed that the services are free *because* of (personalised, targeted) advertisements.⁹⁸

This paradoxical state of consumption preferences of platform users is further demonstrated and aggravated by the sixth insight from the empirical study, namely that of a large endowment effect in consumers' valuations of free-of-charge platform services such as

⁹⁴ See e.g., Andres V. Lerner, *The Role of 'Big Data' in Online Platform Competition*, 2014, 16 available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2482780. See also Marketing Charts, *Consumers Say They Prefer Targeted to Random Online Ads*, 2013, available at <http://www.marketingcharts.com/wp/online/consumers-say-they-prefertargeted-to-random-online-ads-28825/>. The findings of the current piece is consistent with, for example, those of the Information Commissioner's Office (ICO) in the UK which showed that although the majority of respondents prefer to see relevant advertisements, the respondents' levels of perceived acceptability towards advertisements notably decreased after being provided with information about how the advertising technology process works; see ICO, *Adtech: Market Research Report*, March 2019, 5, 18-19, available at <https://ico.org.uk/media/about-the-ico/documents/2614568/ico-ofcom-adtech-research-20190320.pdf>.

⁹⁵ This is based on the comparison of the responses to the statement that the consumers think that they get a good deal because they do not pay a fee for the service and the statement that they would rather pay a fee for the service than have the platform collect data on them and their activities; see text around *supra* note 45 and note 46.

⁹⁶ As noted above, the same response rate is 7% when consumers are only told about the services' being funded by ads without mentioning targeted personalisation of ads; see text around *supra* note 45.

⁹⁷ Respondents could choose multiple answers in response to this question; thus, these two response rates are not mutually exclusive in terms of the respondents who picked them. See text around *supra* note 45 for details.

⁹⁸ For the argument that individuals inconsistently make privacy-related decisions and may not be able to optimally navigate issues of privacy, see Alessandro Acquisti, Leslie K. John and George Loewenstein, *What is Privacy Worth?*, 42 (2) J. LEGAL STUD. 249, 268-269 (2013).

search engines or social networks.⁹⁹ Around 80% of consumers would categorically not pay even a small monthly fee for either their preferred search engine or the Facebook/Sina Weibo social network if these platforms started charging for their services. This is despite the fact these services have a positive monetary value for a majority/near majority of consumers, as reported by the consumers who decline an offer of a larger monthly payment in return for forgoing the same services.¹⁰⁰ Thus, substantial numbers of online platform users *concurrently*: (i) value the service that they receive from platforms and would not like to forgo these free services; (ii) do not like the fact that these services are provided for ‘free’ because advertisers pay platforms to show them advertisements; (iii) dislike personalised and targeted advertising even more than they dislike non-targeted advertising, *but*, (iv) would categorically *not* pay for these services that they positively value in order to avoid the advertisements or data collection practices that they prefer not to experience.

A related, seventh insight is that at face value, the users of some popular platforms (e.g. search engines and social networks) appear to have little brand loyalty, with their consumption decisions being driven primarily by the fact that these platforms are ‘free’ to use. If some of these platforms start charging for their services, the most common sentiment is that consumers would use another platform that does not charge for these services. Yet, when further probed about which alternative providers they would use, the majority of consumers does not know the alternatives they would use instead of their preferred search engine or social media platform. Interestingly, of those named alternatives, Facebook-owned Instagram and WhatsApp – but also Twitter – are listed by consumers as alternatives to Facebook.¹⁰¹ Other search engines and some *internet browsers* are named as alternative options to consumers’ preferred search engine. Thus, *some* consumers are well-informed about competing providers or competing platforms in both cases, but there are also *some* consumers who lack sufficient digital literacy to be able to meaningfully switch to *competing* platforms. The competition policy implications of this insight are discussed below.¹⁰²

The final important insight relates to consumers’ perceptions of technology companies, including the ‘big tech’. Different to the ‘techlash’ narrative common in the traditional media, consumers appear to find technology companies more trustworthy than many other institutions, including newspapers and the government.¹⁰³ However, there are some large variations in the

⁹⁹ This is in line with earlier studies which have suggested that there is, in fact, a ‘superendowment effect’ when it comes to services such as Facebook, Twitter, etc. due to the unusually large difference between users’ WTP and WTA, which one study found to be in the region of 1:20; *see*, Cass R. Sunstein, *Valuing Facebook*, 4 (3) BEHAV. PUB. POL’Y 370, 372-373 (2020).

¹⁰⁰ The reported preferences of consumers are in line with other literature which has established by choice experiments and laboratory experiments that at least some ‘free’ digital services have substantial positive value for consumers (which is unaccounted for in traditional measures of GDP based on positive prices); *see* Erik Brynjolfsson et al, *GDP-B: Accounting for the Value of New and Free Goods in the Digital Economy*, NBER Working Paper 25695 (2019), available at https://www.nber.org/system/files/working_papers/w25695/w25695.pdf. *See also* Mosquera et al who found in a field experiment in the US that one week of Facebook use is worth about USD 67 to users and that individuals place non-trivial value to being able to access Facebook; Mosquera et al, *supra* note 87, 577. Sunstein found similar results in his experiment comprising various social media platform services; *see* Sunstein, *supra* note 99, 373.

¹⁰¹ As noted above, particularly the finding regarding Twitter is interesting as it contrasts with findings of some competition authorities that have found Twitter *not* to be in the same ‘relevant market’ as (and thus, *not* in competition with) Facebook; *see supra* note 67.

¹⁰² *See infra* text around note 151.

¹⁰³ For the ‘techlash’ narrative (referring to backlash against the major technology companies), *see e.g.*, Mark Scott, *In 2020, global ‘techlash’ will move from words to action*, Politico, 31 Dec. 2019; Kari Paul, *A brutal year:*

sentiment towards technology companies and the ‘big tech’ across survey countries. Only in three survey countries (Italy, India, and Brazil) does the majority of consumers think that technology companies are overall trustworthy (‘very trustworthy’ or ‘trustworthy’). Yet, technology companies are, overall, the second most trustworthy out of nine institutions consumers were asked about. Thus, trust levels of consumers, in general, are not high, and this is not an online phenomenon given the list of institutions that consumers were asked about.¹⁰⁴ Regarding the ‘big tech’ in particular (Google, Amazon, Facebook, Microsoft, Apple), the majority of consumers in every survey country thinks that these companies are so big and powerful that there should be a special public authority to keep them under scrutiny. Yet, the majority of consumers in the majority of survey countries also thinks that the ‘big tech’ are the source of much innovation that improves lives and are mostly a source of good. The four countries where the majority of consumers does not share this view are the UK, US, France, and Germany. There appears no real consumer appetite, however, for the big tech to be broken up. Having said that, there are some notable national findings with nearly half of UK, US, and French consumers thinking that these companies pose a threat to democracy (49%, 48%, 48%, respectively). Interestingly, the majority of consumers in the UK, US, and France also find the government to be overall ‘untrustworthy’ (52%, 54%, 53%, respectively) and the majority of consumers in the UK find newspapers overall ‘untrustworthy’ (62%). Notably, the government – the institution that can establish the special public authority that the consumers appear to approve of for keeping the ‘big tech’ under control – is the most actively untrusted (‘very untrustworthy’ or ‘untrustworthy’) institution, overall.

These empirical insights paint a complex picture of the consumer demand side of the relevant platform markets. The specific implications of these insights for competition law, policy, and regulation in digital markets are discussed next to analyse the extent to which and how competition and regulatory policy and enforcement choices may benefit from the insights.

b. The Implications and Recommendations

The empirical insights of this study suggest that many of the online platform services that are subject to scrutiny may have non-trivial levels of multi-homing and switching by users. In contrast, some of the recent regulatory and policy activity or commentary on competition in digital markets does not consider to a sufficient extent – empirically – the *actual* levels of multi-homing and switching by platform users. Instead, *general assumptions* appear to be made regarding the absence of any substantial multi-homing or switching across the range of different platform services and markets.

An important example is the draft EU Digital Markets Act (DMA) which lists ‘lock-in effects’ and ‘a lack of multi-homing for the same purpose by end users’ as two characteristics of ‘core platform services’, providers of which are subjected to the regulation of ‘gatekeepers’ under the Act.¹⁰⁵ In fact, an indicator for monitoring the implementation of the legislative

how the ‘techlash’ caught up with Facebook, Google and Amazon, *The Guardian*, 28 Dec. 2019; Rana Foroohar, *Year in a Word: Techlash*, *Financial Times*, 16 Dec. 2018.

¹⁰⁴ The issue of ‘trust’ has received a great deal of attention in recent times particularly in the online context; see e.g., Ipsos Mori, *Trust: the Truth?*, 2019, available <https://www.ipsos.com/sites/default/files/ct/publication/documents/2019-09/ipsos-thinks-trust-the-truth.pdf>. On trust and economic growth more generally, see e.g., Eric D. Gould and Alexander Hijzen, *Growing Apart, Losing Trust? The Impact of Inequality on Social Capital*, International Monetary Fund (IMF) Working Paper WP/16/176, 2016, available at <https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Growing-Apart-Losing-Trust-The-Impact-of-Inequality-on-Social-Capital-44197>.

¹⁰⁵ EU DMA, *supra* note 1, Recital 2.

proposal is listed as that of the ‘share of users multi-homing with different platforms and services’ and ‘the share of users switching between different platforms and services’.¹⁰⁶ The Impact Assessment Support Study accompanying the DMA similarly lists switching barriers as a ‘key challenge’ and, for example, consumer inertia contributing to sustaining switching barriers and impeding ‘multi-homing’ by consumers.¹⁰⁷ Yet, the evidence provided to support this position in the said Support Study is a single reference to research conducted a decade ago, according to which the vast majority of iPhone owners planned to purchase another Apple handset when they replace their phone.¹⁰⁸ No details of the underlying empirical evidence is provided in the Support Study. Yet, the reported finding is used to support an initiative that will apply to numerous platforms and markets going well beyond mobile phones and mobile operating systems. The Support Study also notes that ‘strong network effects’ can make it difficult for users to switch ‘as noted in comments made in the consumer focus group for this study’ which reportedly highlighted the advantages of using platforms that are used by many people.¹⁰⁹ The ‘consumer focus group’ referred to in the Support Study as a source of empirical evidence for the difficulty of switching appears to have involved gathering the views of a total of *nine* consumers over one 90-minute-long meeting.¹¹⁰

The European Commission Impact Assessment Report accompanying the DMA proposal recognises that the features of a market include both structural and behavioural ones and that ‘demand-side considerations, in particular the behaviour of customers, play an equally important role in this regard’ when establishing the existence of a market failure.¹¹¹ The Impact Assessment Report remarks that the high concentration level is detrimental for consumer surplus ‘as it results mainly in lower choice and higher prices/costs’ and that ‘[t]he choices for consumers are limited by lock-in effects and lack of innovative alternatives’.¹¹² Although all of these factors can, indeed, indicate ineffective competition in digital markets and are relevant parameters of competition, as noted above,¹¹³ the Report provides no particular *empirical* data demonstrating low levels of choice or consumer choices’ being affected by lock-in effects, let alone data demonstrating these *across the board* in the relevant *range* of platform services. Further, the Report notes that more competitive digital markets will allow ‘consumers to multi-home among alternative platforms offering differentiated commercial propositions’.¹¹⁴ Thus, the underlying *general assumption* is that consumers are currently unable to or do not sufficiently multi-home or switch and that the combination of price, quality and choice is dissatisfactory. The findings of the empirical study underlying the current piece suggest that

¹⁰⁶ See EU DMA, *supra* note 1, ‘Legislative Financial Statement’, ¶ 1.4.4.

¹⁰⁷ Eur. Comm’n, *Digital Markets Act – Impact Assessment Support Study, Executive Summary and Synthesis Report*, Dec. 2020, 15, available at <https://op.europa.eu/en/publication-detail/-/publication/0a9a636a-3e83-11eb-b27b-01aa75ed71a1/language-en>.

¹⁰⁸ See *id.* at 15 referring to a study by GfK in 2011, but not providing any direct reference to the study itself, rather referring to a piece on the study published at <https://marketrealist.com/2014/02/ecosystem/>.

¹⁰⁹ DMA Impact Assessment Support Study, *supra* note 107, 15.

¹¹⁰ Eur. Comm’n, *Digital Markets Act – Impact Assessment Support Study: Annexes*, Dec. 2020, 480 *et seq.*, available at <https://op.europa.eu/en/publication-detail/-/publication/2a69fd2a-3e8a-11eb-b27b-01aa75ed71a1/language-en/format-PDF/source-search>.

¹¹¹ Eur. Comm’n, Commission Staff Working Document Impact Assessment Report Accompanying the Document: Proposal for a Regulation of The European Parliament and of the Council on Contestable and Fair Markets in the Digital Sector (Digital Markets Act), Part I, Dec. 2020, ¶ 70, available at <https://digital-strategy.ec.europa.eu/en/library/impact-assessment-digital-markets-act>.

¹¹² *Id.* at ¶¶ 313, 314.

¹¹³ See text around *supra* note 86.

¹¹⁴ DMA Impact Assessment, *supra* note 111, ¶ 315.

the correctness of this important assumption as a general premise across the range of relevant platform services is questionable. In fact, the European Commission's Regulatory Scrutiny Board itself has opined that the Impact Assessment Report should 'present evidence of what determines persistent misuse of gatekeepers' power' and should 'more convincingly demonstrate ... that the identified weak contestability has negative effects in terms of higher mark-ups, lower quality of service, or reduced innovation'.¹¹⁵ Without systematic empirical data on the state of multi-homing (in terms of actual levels and substance) and of choice regarding specific types of platform services, it is not possible to *compare* the effects – and therefore, judge the success on its own terms – of the regulatory proposal on whether the regulation *increases* multi-homing and choice. To the extent that the underlying assumptions are not robust, this highly important regulatory initiative cannot achieve its intended outcomes that rely upon the robustness of these assumptions.

Multi-homing and switching are also relevant to national initiatives on revising competition law for application in digital markets. For example, in the Study on Abuse for the German Ministry for Economic Affairs and Energy, the 'obstruction of multi-homing or switching from one platform to another' was identified as a practice that could be prohibited in the prospective, revised German Competition Act because it was seen as a conduct that encouraged tipping to monopoly in markets with network effects.¹¹⁶ A legislative proposal to reform the German Competition Act subsequently produced by the same Ministry contained a proposal that undertakings with superior market power be prohibited from 'impeding attainment of network effects' as a method of 'unfair impediment' to competitors.¹¹⁷ Given the context of the Study commissioned by the Ministry, such an impediment to competitors' attainment of network effects can clearly include the 'obstruction of multi-homing or switching' by an undertaking with superior market power since without consumer multi-homing or switching across incumbent and competing platforms, the competitors may fail to benefit from network effects to reach the minimum efficient scale by establishing a user base. Indeed, a new type of prohibited conduct in multi-sided markets has been adopted along these lines in the latest (10th) amendment to the German Competition Act. The German Act now bans an 'unfair impediment', as an abuse of superior market power, which includes the impediment of the independent attainment of positive network effects by competitors of the undertaking

¹¹⁵ See Eur. Comm'n, Regulatory Scrutiny Board Opinion, *Proposal for a Regulation of the European Parliament and of the Council on Contestable and Fair Markets in the Digital Sector (Digital Markets Act)*, 10 Dec. 2020, Point C(2), available at https://ec.europa.eu/competition/sectors/ICT/DMA_opinion_of_the_board.pdf. The Regulatory Scrutiny Board has issued a positive opinion 'with reservations' finding that the Impact Assessment Report 'contains significant shortcomings' (after its first opinion on the Report which was 'negative'); *id.*, Point B. The Board is an independent body within the Commission that advises the College of Commissioners. It provides quality control for impact assessments and evaluations at the early stages of the legislative process; see, *Regulatory Scrutiny Board: How the Regulatory Scrutiny Board Works, Its Role and Composition, Members, Reports and Rules*, available at https://ec.europa.eu/info/law/law-making-process/regulatory-scrutiny-board_en.

¹¹⁶ Heike Schweitzer et al, *Modernisierung der Missbrauchsaufsicht fuer marketmaechtige Unternehmen*, 2018, 157, available at: <https://www.bmwi.de/Redaktion/DE/Publikationen/Wirtschaft/modernisierung-der-missbrauchsaufsicht-fuer-marktmaechtige-unternehmen.pdf>.

¹¹⁷ German Ministry for Economic Affairs and Energy, *Entwurf eines Gesetzes zur Aenderung des Gesetzes gegen Wettbewerbsbeschaerakungen fuer ein fokussiertes, proaktives und digitales Wettbewerbsrecht 4.0 und anderer wettbewerbsrechtlicher Bestimmungen (GWB-Digitalisierungsgesetz)* (Bill to Amend the Law against Restraints of Competition for a Focused, Proactive and Digital Competition Law 4.0 and other Competition Law Provisions (GWB Digitization Law)), 9 Sept. 2020, available at www.bmwi.de/Redaktion/DE/Downloads/Gesetz/gesetzentwurf-gwb-digitalisierungsgesetz.pdf. An unofficial English translation can be found at D'Kart Antitrust Blog, *Draft Bill: The Translation*, 21 Feb. 2020, available at www.d-kart.de/blog/2020/02/21/draft-bill-the-translation.

with superior market power in multi-sided and network markets.¹¹⁸ This impediment is prohibited as an undertaking engaging in such conduct ‘thereby creates a serious risk of a considerable restriction of competition on the merits’.¹¹⁹ Thus, the relationship between the incidence of multi-homing and switching, network effects and effective competition in platform markets appears to be now incorporated into the German law.¹²⁰

Another pertinent insight from the current study with direct implications for competition and regulatory policy and enforcement choices in digital markets concerns consumer engagement with defaults. The findings of the current study suggest that relatively high proportions of consumers engage with default settings when using platforms, albeit at different levels of frequency. This implies that, from a policy perspective, it is not possible to make robust, *general assumptions* about the effect of (the absence of consumer engagement with) defaults on competition across the *range* of platform services. Reported levels of user engagement with defaults indicate that policymakers and enforcers need to establish the necessary and relevant *levels* of user engagement with different defaults before conclusions can be reached regarding the effect of defaults and thus, of a status quo bias on effective competition. Put differently, questions such as what proportion of platform users need to engage with which defaults and how frequently have to be answered before it can be assessed whether particular default settings have adverse effects on competition in particular platform services. Further, as noted by the Chairman of the OECD Competition Committee, ‘invoking a status quo bias of consumers is insufficient if we do not know how important this bias is’.¹²¹ Thus, competition authorities and policymakers need to *empirically* assess the *reality* and the *severity* of any status quo bias of consumers on competition.¹²² Not doing so can lead to misguided policy and regulatory choices built upon assumptions that may fail to identify correctly the nature and scale of the problem that they aim to tackle.

In this context, it has been argued that, for example, the EU Commission’s *Google Android* decision and the ongoing US Department of Justice (DoJ) antitrust lawsuit against Google raise a ‘number of troubling issues’ such as the lack of ‘analysis of the importance of the assumed biases of consumers’, which is an obstacle to assessing whether such biases can result in the foreclosure of competing products/services.¹²³ In the *Google Android* decision, the EU Commission held that ‘users [who] find apps pre-installed and presented to them on their smart mobile devices are likely to “stick” to those apps’ and ‘[u]sers are unlikely to look for, download, and use alternative apps, at least when the app that is pre-installed, premium placed

¹¹⁸ Gesetz gegen Wettbewerbsbeschränkungen (GWB) (Act Against Restraints of Competition), Section 20(3a). Available at https://www.gesetze-im-internet.de/gwb/_20.html.

¹¹⁹ *Id.* Courtesy translation can be found at D’Kart Antitrust Blog, *German Act against Restraints of Competition: Most Relevant Changes According to the 10th Amendment, Passed by the German Parliament on 14 January 2021*, available at <https://www.d-kart.de/wp-content/uploads/2021/01/GWB-2021-01-14-engl.pdf>.

¹²⁰ The levels of consumer multi-homing and switching have also been directly taken into account in competition law infringement proceedings in Germany, most notably in the Bundeskartellamt’s decision against Facebook. In *Facebook*, the Bundeskartellamt held in *Facebook* that Facebook abused its dominant position in Germany by collecting and combining user data on the network and outside the network, which was a violation of data protection rules, and also an abuse under competition law; see Bundeskartellamt *Facebook*, *supra* note 19, ¶¶ 163, 164. For discussions of the relevance of multi-homing and switching, see e.g., *id.* at ¶¶ 452; 453; 646. For a detailed discussion of the proceedings in the case so far, see Klaus Wiedemann, *A Matter of Choice: The German Federal Supreme Court’s Interim Decision in the Abuse-of-Dominance Proceedings Bundeskartellamt v. Facebook (Case KVR 69/19)*, 51 INT’L REV. INTEL. PROP. & COMPETITION L. 1168 (2020).

¹²¹ Frederic Jenny, *Competition Law and Digital Ecosystems: Learning to Walk Before We Run*, 2021, 28, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3776274.

¹²² *Id.*

¹²³ *Id.*

and/or set as default already delivers the required functionality to a satisfactory level'.¹²⁴ The Commission further remarked that in order to 'overcome the *status quo bias* and see users looking for alternatives', competing service providers would have to 'convince users that their service is significantly better than the alternative that is already pre-installed, premium placed or set as default'.¹²⁵ Similar to the EU Commission's findings in *Google Android*, the DoJ alleges in its complaint that for a general search engine the most effective means of distribution is to be the 'preset default search engine for mobile and computer search access points' and that '[e]ven where users can change the default, they rarely do'.¹²⁶ The DoJ further alleges that this leaves the 'preset default general search engine with *de facto* exclusivity'.¹²⁷ The link between default positions, the stickiness of defaults (i.e. the lack of consumers' changing the defaults), and the resultant exclusivity position is one of the main allegations and repeated several times through the complaint.¹²⁸ The same is true for the suit against Google by thirty-eight US States led by the State of Colorado: the default position of the Google search engine on internet browsers is said to give it *de facto* exclusivity 'because consumers seldom bother to change the default' and this practice exploits the consumers' 'default bias'.¹²⁹ In fact, two of the alleged violations specifically refer to the locking up of the 'default positions' for search access points as infringements of Sherman Act, Section 2.¹³⁰

Similar statements regarding defaults and the status quo bias are also found in the Majority Report of the US House Subcommittee on Antitrust, Commercial and Administrative Law which notes it to be a 'given' that users have a tendency to stick to defaults, without any reference to a source establishing this tendency as a matter of fact.¹³¹ Elsewhere, the Report notes that even where users can change default browsers (on Android), 'in practice users rarely

¹²⁴ *Google Android*, *supra* note 3, ¶¶ 781-782.

¹²⁵ *Id.* at ¶ 782.

¹²⁶ United States of America and others v Google LLC, Case 1:20-cv-03010, 20 Oct. 2020, ¶ 3, available at <https://www.justice.gov/opa/press-release/file/1328941/download>. In its action, the DoJ is seeking to establish that Google 'acted unlawfully to maintain general search services, search advertising, and general search text advertising monopolies in violation of Section 2 Sherman Act...'; *id.* at ¶ 194.

¹²⁷ *Id.* at ¶ 3.

¹²⁸ The word 'default' is used 77 times in the 64-page-long complaint; *see e.g.*, *id.* at ¶¶ 4, 10, 38, 40, 41, 47, 50, 51, 175, 182, etc.

¹²⁹ State of Colorado et al v Google LLC, 17 Dec. 2020, ¶ 42, available at <https://coag.gov/app/uploads/2020/12/Colorado-et-al.-v.-Google-PUBLIC-REDACTED-Complaint.pdf>. *See also id.* at ¶ 135: 'consumers rarely change the default once it has been set'. Elsewhere the complaint argues that there is a set of 'captive consumers' (to which Google has access) due to the placement of the search engine as the 'default' option; *id.* ¶ 94. *See also id.* at ¶ 105.

¹³⁰ *Id.* ¶ 214; 221.

¹³¹ *See* US House Majority Report, *supra* note 5, 82. Elsewhere, the House Majority Report refers to the CMA Market Study Final Report, *supra* note 19, 194 for the proposition that '[i]n general, users tend to stick with the default presented'; US House Majority Report, *id.* at 179. Yet, the CMA Market Study Final Report at the relevant point of reference itself refers to academic literature on behavioural biases (*status quo bias* and *myopia*) and not to the evidence the CMA collected on the user side of the market in terms of *actual* consumer behaviour regarding defaults; *see* CMA Market Study Final Report, *id.* at ¶ 4.171. *See* a similar reference at US House Majority Report, *id.* at 226. *See also* the US House Majority Report referring to Furman et al, *supra* note 4, at 36 (stipulating that 'consumers in digital markets display strong preferences for default options and loyalty to brands they know') and Stigler Center Report, *supra* note 4, at 8, 41 (stipulating that '[c]onsumers do not replace the default apps on their phones... and take other actions that may look like poor decisions if those consumers like to choose among options and experience competition') for the position that '[i]t is widely understood that consumers usually do not change default options'; US House Majority Report, *id.* at 354. The CMA notes in its Market Study Final Report that the fact that Google makes payments of 'striking' scale to Apple (and other mobile phone manufacturers) for securing the default position for Google Search on mobile devices shows the value that Google places on defaults which act as a barrier to entry and expansion for competing search engines; *see* CMA Market Study Final Report, *id.* at ¶¶ 33-34.

do’, but the Report provides no empirical data or particular reference to support this factual statement, either.¹³²

It is certainly possible that *some* default settings of *some* platform services can have a dampening effect on competition in *some* platform markets where *sufficiently high* numbers of users ‘stick’ to these defaults. However, the empirical findings of the current study suggest that it cannot be *generally assumed* that consumers do not switch away from defaults across the *range* of different relevant default settings.¹³³ For example, a large majority of US consumers report to change all of the default settings they were asked about at some level of frequency (71%-80%).¹³⁴ The findings on defaults are relevant to ongoing competition law and regulatory policy proposals: interventions and remedies concerning default settings need to take into account extant consumer engagement with defaults, both in terms of its extent and its substance, to ensure that they can generate more effective competition than is currently the case. If consumers do engage with defaults and the majority of consumers changes them with some level of frequency in practice, the issue becomes *not* the ‘stickiness’ of defaults, but that of *what proportion* of users need to change *which* defaults and *how often*, for *which* defaults not to distort or prevent effective competition in *which* relevant platform markets. These are questions that require further theoretical and empirical research before policymakers can adopt the right remedies and solutions concerning defaults.

Against this background, it is encouraging that one of the authorities which has led empirical and evidence-led investigations of platform markets, namely the Australian Competition and Consumer Commission (ACCC) is, indeed, currently gathering evidence specifically on *quantitative* estimates of the *value* of pre-installation for internet browsers and default position setting for search engines, such as *how* usage is affected by pre-installation or by being made the default.¹³⁵ The ACCC has raised these questions after carrying out extensive inquiries into the relevant markets.¹³⁶ For its inquiries, amongst other methods, the ACCC

¹³² US House Majority Report, *id.*, 226.

¹³³ See *e.g.*, also CMA Market Study Final Report, *supra* note 19, at Appendix H: Default Positions in Search, ¶ 94, noting that evidence indicates that some users switch away from search defaults, but defaults still have impact on consumers’ behaviour; available at https://assets.publishing.service.gov.uk/media/5efb1d9ad3bf7f7693924235/Appendix_H_-_search_defaults_v.6.pdf.

¹³⁴ This excludes those respondents who chose ‘not applicable’ as their answer to the question asking them about defaults. The breakdown is as follows: 80% of American respondents say that they ever change the default privacy or data collection settings and permissions of a platform or app; 78% of American respondents say that they ever change the default cookie settings when browsing the internet; 71% of American respondents say that they ever change the initial default search engine on their device; and 73% of American respondents say that they ever change the initial default internet browser on their device. When one takes into account only those who say that they ‘always’ or ‘often’ change the default settings, around one third of American respondents report doing so (29%, 28%, 28%, 29%, respectively).

¹³⁵ See ACCC, *Digital Platform Services Inquiry – September 2021, Report on Market Dynamics and Consumer Choice Screens in Search Services and Web Browsers*, Issues Paper, March 2021, 18, available at <https://www.accc.gov.au/focus-areas/inquiries-ongoing/digital-platform-services-inquiry-2020-2025/september-2021-interim-report>. The ACCC is also seeking evidence on difficulties platform users may encounter in changing the defaults; *id.* at 21.

¹³⁶ The ACCC carried out a ‘digital platforms inquiry’ starting in Dec. 2017 after being directed by the Australian Government to consider the impact of online search engines, social media and digital content aggregators (digital platforms) on competition in the media and advertising services markets. The scope of the first inquiry included, in particular, an examination of ‘the impact of digital platforms on the supply of news and journalistic content and the implications of this for media content creators, advertisers and consumers’; see, Commonwealth of Australia, Competition and Consumer Act 2010, *Inquiry into Digital Platforms*, Ministerial Direction, 4 Dec. 2017, available at <https://www.accc.gov.au/system/files/Ministerial%20direction.pdf>. After this inquiry, the ACCC also carried out an inquiry into ‘digital advertising services’ as directed by the Australian Government in Feb. 2020. At the

commissioned a consumer survey to gather views on consumer attitudes and preferences regarding digital platform services.¹³⁷ The ACCC identified customer inertia as a barrier to expansion that was reinforced by the default bias resulting from the default position of the Google search engine and the Google Chrome internet browser on a number of operating systems.¹³⁸ Although in its Preliminary Report the ACCC had recommended that suppliers of operating systems and suppliers of internet browsers be required to provide consumers with options for internet browsers and search engines rather than provide a default browser or a default search engine, respectively, the ACCC changed its position following feedback from stakeholders on these recommendations.¹³⁹ Despite its preliminary view being aimed at reducing the default bias and thereby lowering entry and expansion barriers by eliminating defaults, the ACCC's market inquiry led it to ultimately decide that this could also have negative effects and raise entry barriers for smaller search engines currently vertically integrated into internet browsers.¹⁴⁰ One recommendation of the ACCC is for certain platforms to be required to set 'pro-consumer defaults' that reflect consumer preferences regarding, in particular, data collection practices.¹⁴¹ Notably, and uniquely, the ACCC also recommended that measures be taken to improve digital literacy including by funding non-governmental programmes for this purpose and considering the approach to digital literacy in Australian schools' curricula.¹⁴² Thus, the study of the relevant markets by the ACCC led to proposals that are specifically tailored to the facts *empirically* observed on the demand side combined with findings from the supply side of these markets. Both the ACCC's recommendations for improving digital literacy and its focus on defaults regarding internet browsers and search engines tally with the empirical findings of the current study on the levels of digital literacy and engagement with different defaults, as well as on the presence of some consumer confusion between internet browsers and search engines.

Similarly to the ACCC, the UK Competition and Markets Authority (CMA) conducted a 'market study' of online platforms and digital advertising markets.¹⁴³ The CMA also found that default behaviour by consumers has had an important impact on the shape of competition in search and social media whilst acknowledging that some consumers do switch away from

time of writing, this second inquiry still continues, but the ACCC, *Digital Advertising Services Inquiry - Interim Report*, 28 Jan. 2021 can be found at <https://www.accc.gov.au/focus-areas/inquiries-ongoing/digital-advertising-services-inquiry/interim-report>.

¹³⁷ The report of the empirical study prepared for the ACCC is available at <https://www.accc.gov.au/system/files/ACCC%20consumer%20survey%20-%20Consumer%20views%20and%20behaviours%20on%20digital%20platforms%2C%20Roy%20Morgan%20Research.pdf>.

¹³⁸ ACCC Final Report, *supra* note 19, 110.

¹³⁹ ACCC Final Report, *supra* note 19, 111.

¹⁴⁰ ACCC Final Report, *supra* note 19, 111. The ACCC decided to request Google to offer the choice screen which Google rolled out as a result of the EU Commission's Google Android decision to Australian consumers, too; ACCC Final Report, *supra* note 19, 111-114. The choice screen offers a list of search apps and browsers for Android phone owners to choose from. The apps will be pre-installed on Android devices, but not be the default option and the consumers would be presented with a range of choice as a result; *id.* at 113.

¹⁴¹ ACCC Final Report, *supra* note 19, 464, 468.

¹⁴² ACCC Final Report, *supra* note 19, 21, 33, 34, 366-367, 368.

¹⁴³ A 'market study' enables the CMA to examine 'the causes of why particular markets may not be working well, taking an overview of regulatory and other economic drivers and patterns of consumer and business behaviour'; see CMA, *Market Studies and Market Investigations: Supplemental guidance on the CMA's Approach*, Jan 2014 (Revised July 2017), ¶ 1.5, available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/624706/cma3-markets-supplemental-guidance-updated-june-2017.pdf. Market studies are conducted as part of the CMA's general review function as stipulated under Section 5 of the Enterprise Act 2002, as amended the Enterprise and Regulatory Reform Act 2013.

defaults.¹⁴⁴ Subsequently, the CMA recommended that the UK Government establish a Digital Markets Unit (DMU) and give the DMU the powers to introduce ‘pro-competitive interventions’ such as consumer choice (e.g. choice screens) and default interventions (e.g. restricting defaults and monetisation).¹⁴⁵ The enabling of effective consumer choice including by addressing instances of choice architecture that leads to consumer harm is also an area where the CMA Digital Markets Taskforce recommended action be taken.¹⁴⁶ The Taskforce identified the levels of information provided to consumers, the way in which choices are presented, and defaults as factors that can lead to barriers to effective and informed decision-making by consumers.¹⁴⁷ Barriers to switching and multi-homing are likewise an area of concern on which the Taskforce focused.¹⁴⁸ The findings of the current study suggest that the potential ‘pro-competitive interventions’ would benefit from *quantifying* and breaking down the specifics of consumer engagement with specific defaults before establishing which interventions may be effective *alongside* action to remedy the informational deficiencies of consumers.

Turning to policy *blind spots*, some of the empirical findings of this study raise doubts about the potential effectiveness of some of the policy proposals as currently contemplated in protecting or restoring effective competition in digital markets. This includes policy proposals focused on increasing multi-homing and switching, altering the default arrangements for various platform services, as well as other proposals that rely on consumer action to facilitate competition, such as choice screens and data portability.¹⁴⁹ Put simply, there are more platform users in every survey country who do not know how a search engine ranks results or why a search engine is ‘free’ or how a most popular social network is funded than platform users who do not multi-home for these services or who never change their default search engine or default internet browser. Combined with the finding that platform users’ reported preferences suggest that their choices between platforms are driven strongly – even primarily – by the ‘free’ nature of the relevant services, any interventions in platform markets need to take into consideration *both* extant levels of consumer understanding of platform services *and* extant levels of consumer engagement with defaults, multi-homing and switching to be effective. This requires *both* the rethinking of some consumer-focused remedies and solutions currently envisaged *and* the contemplation of new solutions to tackle the digital literacy deficiency, which are currently not envisaged by competition authorities or policymakers.

The findings of the current study regarding digital literacy are disconcerting not least because all the respondents to the survey are internet users who are tech-savvy enough to participate in an online survey; digital literacy amongst those who are not yet online or less tech-savvy may be even lower.¹⁵⁰ Further, any tendencies to stick with defaults – which, as seen above, occupies many authorities – will be aggravated by the low levels of digital

¹⁴⁴ CMA Market Study Final Report, *supra* note 19, ¶ 31 and *see supra* note 133.

¹⁴⁵ CMA Market Study Final Report, *supra* note 19, ¶ 125, Box 1; ¶¶ 8.30-8.31.

¹⁴⁶ CMA, *A New Pro-Competition Regimes for Digital Markets: Advice of the Digital Markets Taskforce*, 8 Dec. 2020, CMA135, 7, available at https://assets.publishing.service.gov.uk/media/5f9e07562f98286c/Digital_Taskforce_-_Advice.pdf.

¹⁴⁷ *Id.* 20.

¹⁴⁸ *Id.* 21.

¹⁴⁹ For data portability as an obligation for gatekeepers to provide, *see e.g.*, EU DMA, *supra* note 1, Art. 6(h).

¹⁵⁰ Previous studies have similarly found low levels of understanding amongst people, which is deemed to be a likely major limitation to people’s making active choices on platform markets; *see e.g.*, Centre for Data Ethics and Innovation (CDEI), *Active Online Choices: Designing to Empower Users, Summary of Desk Research*, Nov. 2020, 3, available at <https://www.bi.team/wp-content/uploads/2020/11/CDEI-Active-Online-Choices-Desk-Research-Write-up-FOR-PUBLICATION-1.pdf>.

literacy.¹⁵¹ The findings of the current study indicate that the absence of an understanding of the very basics of how some platforms that consumers use daily operate, how they fund their operations, how they show advertisements, and the reluctance of consumers to pay for any of the ‘free’ platform services is a *universal* phenomenon across all survey countries. Remedying the digital literacy deficiency should, subsequently, be on the agenda of all policymakers and regulators seeking to protect or restore effective competition in digital markets. For example, compulsory notices prominently displayed on the homepages of search engines or social networks which – in plain and simple language – inform consumers how these services are funded or such notices on search results pages explaining how the results are ranked should be contemplated by authorities and policymakers as potential remedies. It is not clear that all of the policymakers or enforcers currently elaborating on remedies or interventions for these markets are considering such informational remedies.¹⁵² Further attempts at remedying the digital literacy problem are also necessary and require rethinking of the ways how governments currently play a role in improving the digital literacy levels of their citizens, including through incorporation of digital literacy in school curricula.¹⁵³

It is possible that the *stickiness* of the ‘free’ nature of platform services – which is currently also *not* a demand side feature taken into account by policymakers – may be alleviated to a degree if more consumers understand why and how these platform services are ‘free’ and consequently make better-informed decisions about whether and how to ‘consume’ these services. There is some empirical indication that these aspects *do* matter to, at least, *some* consumers for their consumption decisions. Fixing the digital literacy problem can, in turn, generate competition by incentivising innovation to offer platform services operating on different business models with different revenue generation methods. Indirectly, such a shift in the business model can also alleviate some of the data protection and privacy concerns if it leads to the emergence of alternative business models to advertising-funded ‘free’ platforms that are less reliant on consumer data.

Interventions in digital markets through competition law and policy or *ex ante* regulations can only be effective to the extent that they are tailored to the *realities* of the consumer demand side of the relevant markets. Given that the scrutinised platform markets are mostly consumer-facing markets, interventions, remedies or proposals that do not take into account the extant levels of digital literacy of platform users – as well as those that build upon questionable general assumptions about demand side features (e.g. on multi-homing, switching and engagement with defaults) – are unlikely to be effective. For example, interventions to prohibit or to provide certain defaults or to give consumers a choice between different platforms rather than defaults (e.g. by choice screens) can only be effective in generating or

¹⁵¹ See *id.* For UK consumers, it has been remarked that the general public arguably have ‘at best a basic understanding’ of various integral processes that affect their online experience such as data collection and use, online targeting, how online businesses make money, the role of algorithms, etc.; *id.* at 17.

¹⁵² The draft EU DMA, for example, has no provisions that would remedy any informational gaps on consumer-facing markets; see EU DMA, *supra* note 1. In contrast, for example, one of the objectives of the UK Digital Regulation Cooperation Forum (comprising the CMA, Ofcom and Information Commissioner’s Office) is to collaborate with stakeholders and government to develop design frameworks and approaches that take into account media literacy and choice architecture design that encourages ‘free and informed consumer choice’ in online services; see Digital Regulation Cooperation Forum (DRCF), *Plan of Work for 2021-2022*, Policy Paper, 10 March 2021, available at <https://www.gov.uk/government/publications/digital-regulation-cooperation-forum-workplan-202122/digital-regulation-cooperation-forum-plan-of-work-for-2021-to-2022#fn:22>.

¹⁵³ As far as the author is aware, Australia is the only country where recommendations have been made regarding digital literacy and its role in school curricula following the findings of the competition authority regarding digital markets; see text to *supra* note 142.

protecting competition *if* they correctly identify the specifics of the problematic defaults based on actual consumer use *and if* sufficient numbers of platform users have a sufficient understanding of what it is they are choosing between, why it matters, or what the implications of different choices are. Similarly, where some consumers cannot tell a search engine apart from an internet browser,¹⁵⁴ giving a choice between different search engines and between different internet browsers to these consumers is unlikely to be an effective remedy on its own to generate more competition.¹⁵⁵ It is, of course, possible that some degree of consumer confusion results from the practices of some platforms, such as that of many internet browsers' defaulting to a search engine.¹⁵⁶ The point being made here is that under *current* circumstances, some of the extant policy proposals may fail to achieve their aims of protecting or restoring effective competition due to both their reliance on challengeable general assumptions and their unattended blind spots regarding the demand side of the relevant markets.

All in all, given the levels of digital literacy identified in the empirical findings, the stickiness of the 'free' nature of some platform services for users, as well as the reported levels of multi-homing, switching, perceived choice and quality, and engagement with defaults by consumers, interventions in platform markets to improve competition need to adopt a *holistic* and empirically-informed approach to the consumer side of these markets. That approach requires both testing the robustness of some *general assumptions* driving policy proposals and eliminating some policy *blind spots*, as elaborated in this article.

V. Conclusion

Policymakers, regulators and legislatures around the world are grappling with the challenges posed by online platform services which have become integral to the lives of consumers globally. Despite the growing number of proposals to introduce or amend laws and regulations, enforcement actions, and literature pertaining to competition in digital markets, there is a dearth of systematic empirical evidence collected with the aim of building a robust empirical picture of the operation of these markets and the relevant market actors. This article fills in some of this empirical gap by providing the results of the first large-scale, cross-continental survey of over 11,000 consumers of online platform services across ten countries in five continents. The empirical insights reveal a complex web of paradoxes at play when it comes to consumers on the demand side of platform markets. The findings of this article can contribute to improved policy and regulatory choices through the identification and analysis of key consumer demand side insights. Some of these insights signify questionable general assumptions, whilst others reveal blind spots in contemporary policy proposals. Improved policy and regulatory outcomes necessitate empirically testing the assumptions and eliminating the blind spots.

The empirical findings of this article suggest that competition may be effective in some aspects of digital markets, which policymakers, regulators and legislatures may be generally assuming not to be effective. These include the incidence of multi-homing and switching by users, perceptions of choice and quality, as well as user engagement with defaults. The empirical findings also suggest that competition may be ineffective in other aspects of digital markets, which enforcers, regulators and legislatures are currently not tackling due to their

¹⁵⁴ See text around *supra* note 70.

¹⁵⁵ As currently under consideration by the ACCC and the CMA; see text to *supra* note 135 and text around *supra* note 139, and text around *supra* note 145, respectively.

¹⁵⁶ The finding that some search engine users are more likely to *incorrectly* identify how a search engine ranks results than those who have used search engines less frequently or less recently may indicate a similar problem; see *supra* text around note 49.

assumptions about consumers, which take their attention away from the actual failures on the demand side, leading to *blind spots*. Most notably, the empirical findings suggest that there is a lack of consumer knowledge and understanding regarding even the very basic operations of some online platform services used daily by billions of consumers. Considered holistically, the empirical findings cast doubt on the potential effectiveness of some prevailing remedy and policy proposals and reveal the necessity of contemplating other solutions that are currently overlooked. Extant proposals concerning multi-homing and switching, defaults, choice screens, and data portability, all rely on well-informed consumers. Yet, the empirical findings suggest that the relevant markets contain *both* substantial numbers of consumers who multi-home across and switch between platforms and engage with defaults *and* substantial numbers of consumers who lack the digital literacy to understand how a search engine ranks results or how some of the most popular platform services are provided to them free-of-charge to use. Providing users with options of search engines and internet browsers to choose from or expecting them to port their data to competing platforms so that they can drive competition between providers – without *also* remedying the digital literacy deficiency – is akin to looking for one’s lost keys under the proverbial streetlight.

The reported preferences of platform users suggest that the ‘free’ nature of platform services draws users like a moth to a flame, irrespective of any concerns they may have with the data collection practices of platforms. Coupled with the lack of digital literacy and the endowment effect, this attraction of the ‘free’ can be fatal to innovation that could otherwise lead to the emergence of alternative business models to those of the incumbents. Thus, the current absence of policy solutions aimed at fixing the digital literacy problem on the demand side can also dampen the incentives to innovate on the supply side of some of these markets. That, in turn, can lead to the failure of current policy proposals in achieving their aims of protecting, restoring, or generating effective competition in digital markets. Systematically curing the digital literacy deficiency requires the dedication of governmental resources to digital education; enhancing digital literacy should be on the regulatory and legislative agenda of those jurisdictions seeking to protect and sustain competition in digital markets. So far, digital literacy is mostly absent from the competition and the concomitant regulation debate. Investing the requisite resources to enhance digital literacy in aspects which this study has demonstrated as lacking can improve the choices that consumers make online. More informed consumer choices can both engender stronger competition in some platform markets and help to alleviate some concerns in other policy areas such as consumer protection and data protection/privacy.

The empirical findings and the insights derived from them in this study, alongside the policy implications and the recommendations that this study articulates, contribute to building the necessary *holistic* and empirically-informed approach to the demand side of online platform markets. With these contributions, policymakers can begin to unweave the web of paradoxes presented by the consumers of online platform services, in their strives for more competitive digital markets.