Unveiling Hidden Power: How Digital Platforms Dictate Consumer Choices

Sri Hartini RACHMAD, Yosep, Kennith G.C. DILLENA, Daniel J.P. Riveong, Devi ASIATI

Contact: shartini212@gmail.com, sri23024@mail.unpad.go.id

Abstract

This research paper investigates how major digital platforms such as Google, Amazon, and Apple engage in self-preferencing where they prioritize their products and services over those of competitors. The study aims to reveal the extent and effects of this practice on market competition and consumer choice. Using a qualitative approach, this research combines case studies, reviews of literature, analyses regulatory documents, and interviews with experts. The findings show that self-preferencing disrupts fair competition, stifles innovation, and erodes consumer trust by manipulating search algorithms to favor platform-owned offerings. To address these issues, this research suggests increased transparency in algorithmic processes, rule implementation to ensure that platforms treat all products equally, and stronger regulatory measures to protect consumers and maintain competitive markets.

Keywords: s*elf-preferencing, digital platform; competition, consumer trust, algorithmic bias*

JEL Codes: ***L41****: Monopolization; Horizontal Anticompetitive Practices;* ***L42****: Vertical Restraints; Resale Price Maintenance;* ***D40****: Market Structure, Pricing, and Design*

1. Introduction

Digital platforms such as Google, Amazon, and Facebook have fundamentally transformed how consumers interact with the marketplace. These platforms are not just intermediaries; they are powerful gatekeepers that influence what products and services consumers see and, ultimately, choose. A key way these platforms exercise their power is through self-preferencing—where they prioritize their products and services over those of competitors. While this practice is often invisible to users, its effects are profound, distorting competition and limiting consumer choice. This research paper critically examines the prevalence and consequences of self-preferencing via digital platforms and argues that this practice represents a significant threat to both market fairness and consumer autonomy.

A fundamental shift in market dynamics has accompanied the rise of digital platforms. These platforms, which began as neutral transaction conduits, have increasingly adopted strategies that reinforce their dominance. One of the most pervasive strategies is self-preferencing, where platforms use their control over search results, rankings, and recommendations to favor their products. For example, in 2017, the European Commission fined Google €2.42 billion for abusing its market dominance by promoting its own comparison shopping service at the top of search results while demoting those of rivals. The investigation revealed that Google systematically favored its service, even when competitor offerings were more relevant to consumers' queries. This practice reduced traffic to competing sites and effectively forced consumers to use Google's services, limiting their ability to make independent choices on the basis of quality or price (European Commission, 2017).

Amazon, too, has faced scrutiny for its self-preferencing practices. The company has been accused of using data from third-party sellers on its platform to identify profitable products, which it then replicates

under its private label. These private-label products are then promoted over those of the original sellers. A 2020 investigation by the Wall Street Journal revealed that Amazon employees had access to proprietary data from independent sellers, which they used to develop competing products. These products were then strategically positioned on Amazon's marketplace to ensure maximum visibility, often appearing at the top of search results or as "Amazon's choice" recommendations, thereby overshadowing the original sellers (Khan, 2020).

Previous research has made significant contributions to the understanding of self-preferencing. One notable strength is the use of comprehensive case studies to illustrate how major platforms, such as Google, Amazon, and Apple, engage in these practices. For instance, Khan's (2020) seminal work on Amazon's antitrust paradox offers a thorough examination of how Amazon's self-preferencing affects market dynamics and competition. Khan's analysis is robust, drawing on a wealth of data to illustrate how Amazon's practices stifle competition and innovation (Khan, 2020, p. 710). This case study method provides valuable insights into the real-world implications of self-preferencing.

Similarly, the European Commission's investigation into Google's search practices has provided concrete evidence of how self-preferencing can distort competition (European Commission, 2017). The detailed analysis of Google's algorithmic manipulations underscores the direct impact of self-preferencing on market competition and consumer choice. Such regulatory studies offer empirical evidence that is crucial for understanding the breadth and depth of the issue. Moreover, research by Zhu and Liu (2018) on Amazon's competitive strategies highlights how self-preferencing influences market structure and consumer behavior. Their study effectively employs economic models to analyze the competitive implications of self-preferencing, contributing valuable theoretical insights (Zhu & Liu, 2018, p. 2618).

Despite their contributions, previous studies have several limitations. One significant weakness is the limited scope of case studies, which often focus on a narrow set of platforms or market segments. For example, while Khan's (2020) study provides an in-depth analysis of Amazon, it does not explore how similar practices might manifest in other digital platforms or sectors. This narrow focus limits the generalizability of the findings and may overlook broader trends in self-preferencing across different platforms. Another limitation is the reliance on regulatory documents and legal cases, which, while providing valuable insights, often present a retrospective view of the issue. The European Commission's investigation into Google (European Commission, 2017), while thorough, reflects a specific regulatory perspective that may not capture the full spectrum of self-preferencing practices in the digital economy. Additionally, such studies may be influenced by legal and political considerations that affect their objectivity. Furthermore, existing research often lacks a comprehensive examination of consumer perspectives. While studies such as those by Zhu and Liu (2018) offer valuable economic insights, they tend to prioritize theoretical and market-level analyses over consumer experiences and perceptions. This omission means that the impact of self-preferencing on consumer trust and behavior has not been fully explored.

The issue of self-preferencing by digital platforms is critically important in today's global economy because of its profound impact on market competition, consumer autonomy, and economic integrity. As these platforms increasingly dominate the marketplace, their ability to favor their own products and services over those of competitors poses a substantial threat to competitive equity. Such practices not only distort market structures but also erode consumer trust and suppress innovation, leading to a marketplace that is less diverse and less competitive. As these digital giants expand their influence, unchecked self-preferencing risks fostering monopolistic behaviors that could harm consumers on a global scale, undermining the very principles of a free market. It is imperative to observe and regulate this issue to ensure that the global digital economy remains open, competitive, and just. Ignoring the challenges posed by self-preferencing could result in a future where a few dominant platforms hold

disproportionate power over the digital infrastructure, stifling innovation, restricting entrepreneurial opportunities, and denying equitable access to the benefits of the digital age.

2. Theoretical Framework

Self-preferencing can be analyzed through several theoretical lenses, including market power, behavioral economics, and antitrust law.

2.1. Market Power and Economic Theory

From an economic standpoint, self-preferencing is a clear manifestation of market power abuse. Platforms such as Google and Amazon hold significant control over their respective markets, allowing them to engage in anticompetitive practices without facing immediate repercussions. Traditional economic theory suggests that such behavior leads to market inefficiencies, including higher prices, reduced innovation, and lower consumer welfare (Motta & Peitz, 2021).

For example, Amazon's use of third-party seller data to create competing products undercuts the very sellers who rely on its platform. This behavior not only reduces the incentive for these sellers to innovate but also creates an artificial barrier to market entry, as new or smaller companies struggle to compete against Amazon's in-house products, which benefit from superior placement and visibility on the platform.

2.2. Behavioral Economics and Consumer Manipulation

Behavioral economics provides additional insight into how self-preferencing affects consumer behavior. Digital platforms are adept at designing choice environments—often referred to as "choice architecture"—that nudge consumers toward decisions that benefit the platform. The "default effect," a well-known concept in behavioral economics, highlights how consumers are more likely to select options that are presented as defaults or appear prominently in a list (Thaler & Sunstein, 2008).

A practical example of this can be seen in Amazon's "buy box" feature. The buy box is the box on a product detail page where customers can begin the purchasing process by adding items to their shopping cart. Winning the Buy Box is crucial for sellers because the vast majority of Amazon sales are made through it. However, Amazon's own products frequently win the Buy Box, even when they are not the lowest-priced option. This occurs because Amazon controls the algorithms that determine which products appear in the Buy Box, allowing it to prioritize its own products over those of third-party sellers. This manipulation of consumer choice is subtle but powerful, leading consumers to select Amazon-branded products even when better or cheaper alternatives exist.

2.3. Antitrust Law and Regulatory Challenges

The practice of self-preferencing also raises significant concerns from an antitrust perspective. Antitrust laws are designed to prevent companies from engaging in practices that harm competition and consumers. However, the digital economy presents unique challenges for antitrust enforcement. Traditional antitrust frameworks, which focus on issues such as price-fixing and monopolistic behavior, often struggle to address the complexities of digital platforms, where market power is exercised through control over data and algorithms (Cunningham, Ederer, & Ma, 2021).

One notable case is the ongoing antitrust investigation into Apple's App Store practices. Developers have accused Apple of favoring its own apps over those of third-party developers, both in search rankings and through other preferential treatment. For example, Spotify has long complained that Apple Music receives preferential placement on iOS devices, making it harder for Spotify to compete, despite offering a similar service. The European Commission is currently investigating whether Apple's control over its app ecosystem constitutes an abuse of dominance that stifles competition (European Commission, 2020).

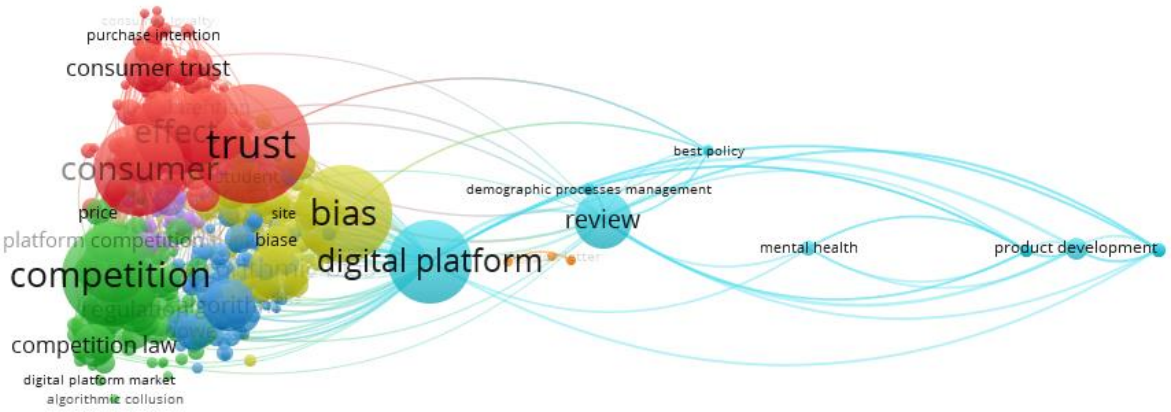
3. Methodology

The methodology of this study is meticulously crafted to offer a comprehensive and nuanced understanding of self-preferencing practices via digital platforms. By integrating case study analysis, literature review, and expert interviews, this study provides a robust examination of the issue while recognizing the inherent challenges of investigating such a dynamic and complex subject. The research employs a qualitative design, focusing on an exploratory approach to understand the intricate dynamics of self-preferencing and its impact on market competition and consumer welfare. A multicase study approach is utilized to examine the behaviors of major platforms such as Google, Amazon, and Apple, which are selected for their significant market influence and well-documented history of self-preferencing.

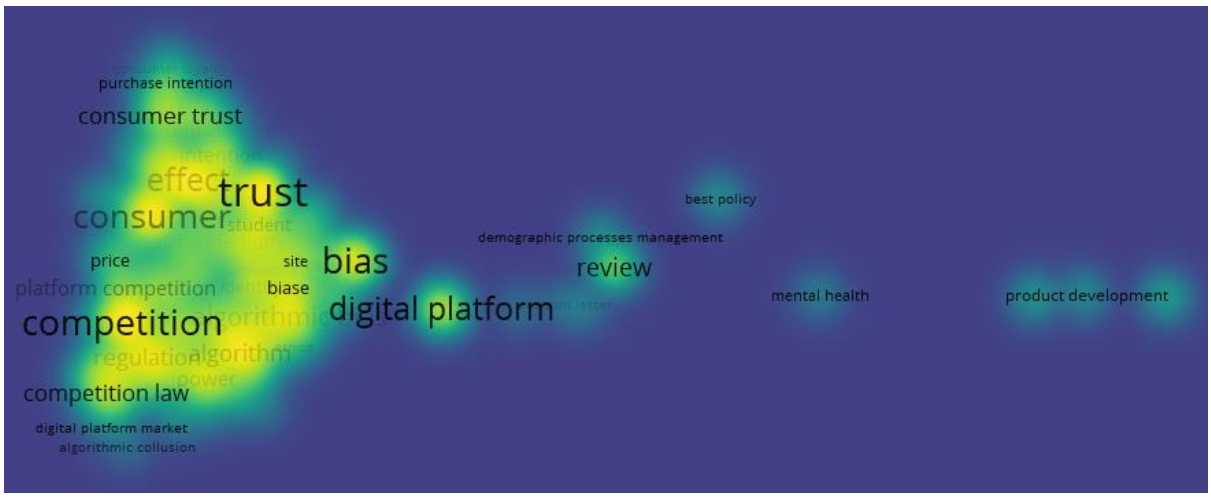
To analyses regulatory documents, this research employs VOSviewer, a powerful tool for bibliometric analysis and network visualization This study employs a qualitative descriptive method to analyze research data from 5,000 international journals indexed by Crossref, focusing on keywords such as "self-preferencing", "digital platforms", "competition" ,"consumer trust" ,and "algorithmic bias" over a six-year period (2019-2024). Utilizing VOSviewer, the analysis produces a bibliometric network visualization where the size of the labels and circles reflects the weight of each item, with larger sizes indicating greater weight. To prevent label overlap, some labels may be omitted. The color of each item represents its cluster, while lines between items depict the strength of their co-citation links, with up to 1,000 lines illustrating the strongest connections. As shown in Figure 1, the proximity between journals in the network indicates their relatedness, with closer items signifying stronger associations. The analysis identifies seven distinct clusters, revealing the interconnectedness of research topics related to how digital platforms influence consumer choices. The network visualization shown in Picture 1, with its nodes and connecting lines, offers a detailed and comprehensive overview of the research landscape. This visual representation provides valuable insights into the current state of research and serves as a guide for identifying future research directions in this field.

In the bibliometric network analysis, the clusters represent different groupings of related items based on their co-citation or co-occurrence. Each cluster is color-coded to distinguish between different thematic or research areas:

Cluster 1 (111 items, colored red): This large cluster likely represents a prominent research theme or area of interest, given its size. its substantial number of items suggests it is a major topic within the field. Cluster 2 (108 items, colored green): This cluster also encompasses a significant number of items, making it another major area of research. Cluster 3 (102 items, colored blue): This cluster, with over 100 items, is another key research theme. Cluster 4 (86 items, colored yellow): While slightly smaller than the previous clusters, this yellow-colored cluster still represents an important area of study, albeit with fewer items. Cluster 5 (32 items, colored purple): This smaller cluster indicates a more specialized or niche area of research. The purple color helps distinguish it from the larger clusters. Cluster 6 (16 items, colored light blue): With only 16 items, this cluster is the smallest and likely represents a more specific or emerging research topic. Cluster 7 (6 items, colored orange): The smallest cluster, with just 6 items, indicates a very specialized or under-researched area.



The density map presented in Picture 2 includes a comprehensive collection of articles related to the research topic of how digital platforms influence consumer choices. This map encompasses both studies that are directly focused on the topic and those that are indirectly related, providing a broad overview of the research landscape. The map uses color and size to represent the concentration of research on specific keywords. Areas with a more intense yellow color and larger circles indicate that the keywords are closely related and have been the focus of extensive research. In contrast, areas where the color fades and shifts toward green, with smaller and more dispersed circles, signify topics that have been less explored. The greener the area, the less research has been conducted on those topics. This visualization suggests that areas with lower density, indicated by the green regions, could offer valuable opportunities for future research, as they represent gaps in the current literature.



Picture 2. Density visualization of how digital platforms influence consumer choices

The bibliometric network analysis reveals distinct thematic clusters within the research on digital platforms and consumer choices, each represented by different colors and sizes in the network. The larger clusters, such as those in red (Cluster 1), green (Cluster 2), and blue (Cluster 3), indicate prominent research areas with substantial academic focus. These clusters encompass a broad range of topics and suggest well-established fields of study. In contrast, smaller clusters, such as those in purple (Cluster 5), light blue (Cluster 6), and orange (Cluster 7), represent more specialized or emerging research areas.

The analysis demonstrates that while some topics are heavily researched, others remain underexplored. For instance, the smaller clusters might highlight niche areas or emerging trends that have yet to receive significant attention. In light of the bibliometric analysis conducted using VOSviewer, several key research directions emerge.

Firstly, investigating underexplored areas, particularly within the smaller clusters such as Cluster 6 (light blue) and Cluster 7 (orange), could uncover niche or emerging topics that promise to advance understanding in these specialized fields. Simultaneously, researchers should delve deeper into the larger clusters, which denote established research areas, by focusing on specific subtopics to reveal new dimensions and nuances. Interdisciplinary studies are also encouraged, as bridging different thematic areas may offer comprehensive insights into how digital platforms affect consumer choices, potentially uncovering integrated approaches and novel research questions.

3.1. Data collection

The study draws on detailed case studies of Google, Amazon, and Apple, emphasizing documented instances of self-preferencing. These case studies are informed by data from antitrust investigations, regulatory filings, and reputable news sources, including the European Commission's investigation into Google's comparison-shopping service, the Wall Street Journal's analysis of Amazon's private-label practices, and ongoing antitrust scrutiny of Apple's App Store. To understand the theoretical foundations and implications of self-preferencing, a thorough review of the academic literature was conducted, encompassing studies on market power, antitrust law, and behavioral economics sourced from peer-reviewed journals, books, and conference papers via databases such as JSTOR, Google Scholar, and SSRN. Regulatory documents from the European Commission, the U.S. Federal Trade Commission (FTC), and other relevant bodies were analyzed to explore regulatory perspectives on self-preferencing. Legal cases, especially those concerning antitrust laws, were also reviewed to grasp the judicial approach to self-preferencing. Additionally, semistructured interviews with experts in competition law, digital economics, and consumer protection were conducted to supplement the documentary data, providing deeper insights into the complexities and broader implications of self-preferencing in digital markets.

3.2. Data analysis

The collected data were subjected to thematic analysis to identify key patterns and themes related to self-preferencing. The analysis focused on understanding the strategies employed by platforms, the impact on competition, and the consequences for consumers. Themes such as “market distortion,” “consumer manipulation,” and “innovation suppression” were identified and explored in depth. A comparative analysis was conducted across the different case studies to identify similarities and differences in self-preferencing practices among the platforms. This analysis helps in understanding broader patterns of behavior and their implications for market dynamics. The study also incorporates a legal and economic analysis, drawing on antitrust law and economic theory to assess the legality and economic impact of self-preferencing. This involved examining how current legal frameworks address (or fail to address) these practices and exploring the economic consequences for competition and consumer welfare.

4. Analysis

4.1. Market Distortion and Competitive Harm

Self-preferencing distorts the competitive landscape by creating artificial advantages for the platform’s own products and services. This distortion is particularly problematic in markets where a few platforms dominate, as it allows these platforms to entrench their market power at the expense of competitors.

For example, Google’s self-preferencing of its search results significantly harms rival comparison-shopping services, reducing their visibility and traffic. The European Commission’s investigation revealed that some competitors lost as much as 90% of their traffic due to Google’s practices, forcing many competitors to exit the market together. This reduction in competition ultimately harms consumers

by reducing the diversity of available options and potentially leading to higher prices (European Commission, 2017).

Similarly, Amazon's self-preferencing practices harm third-party sellers, particularly small businesses that rely on the platform to reach customers. By using its dominant position to favor its own products, Amazon reduces the incentive for third-party sellers to innovate or invest in their businesses, knowing that they are at a systematic disadvantage. This suppression of competition leads to a less dynamic market, where consumer choices are artificially constrained.

4.2. Consumer Welfare and Trust Erosion

From a consumer welfare perspective, self-preferencing undermines the trust that users place in digital platforms. Consumers generally believe that the products and services recommended by a platform are those that best meet their needs. However, when platforms engage in self-preferencing, this trust is betrayed, as consumers are nudged toward choices that benefit the platform rather than themselves.

A strong example of this can be seen in the travel industry, where platforms such as Booking.com and Expedia have been accused of manipulating search results to favor hotels that pay higher commission rates. In 2020, the Italian Competition Authority fined Booking.com €4 million for misleading consumers by promoting certain accommodations on the basis of commission rates rather than customer satisfaction or price. This practice not only distorts consumer choice but also erodes trust in the platform, as consumers may pay more for lower-quality accommodations because of the platform's self-serving algorithms (Autorità Garante della Concorrenza e del Mercato, 2020).

4.3. Innovation Suppression and Market Stagnation

Self-preferencing also has a negative effect on innovation. In a competitive market, firms are incentivized to innovate to attract consumers. However, when platforms engage in self-preferencing, they create significant barriers to innovation, particularly for smaller firms and new entrants. These companies may be discouraged from investing in new products or services if they know that the platform will favor its own offerings, regardless of quality or price.

For example, in the app market, developers have long complained that Apple's self-preferencing practices stifle innovation. By prioritizing its own apps and services, Apple makes it difficult for third-party developers to gain visibility and attract users. This has led to calls for greater regulation of app stores to ensure that developers can compete on a level playing field, which would ultimately benefit consumers by fostering a more dynamic and innovative market (Lina Khan, 2020).

4.4. Expert Interviews Analysis

The expert interviews provided critical insights into the multifaceted nature of self-preferencing and its broader implications for digital markets. The perspectives of competition law, digital economics, and consumer protection experts underscore the need for more robust regulatory frameworks and greater transparency to address the challenges posed by self-preferencing. These interviews complement documentary data and enhance the understanding of how self-preferencing affects competition, consumer behavior, and market fairness.

To deepen the understanding of self-preferencing and its impact on digital markets, semistructured interviews were conducted with experts in competition law, digital economics, and consumer protection. These interviews aimed to provide nuanced insights into the complexities surrounding self-preferencing and to complement the documentary data gathered from case studies, literature, and regulatory documents.

Insights from Competition Law Experts

The competition law experts highlighted several critical aspects of self-preferencing:

a. **Legal boundaries and enforcement challenges:** Experts emphasized that current antitrust frameworks are often inadequate for addressing the unique challenges posed by self-preferencing in digital markets. They noted that traditional antitrust laws, which are designed primarily to address issues such as price-fixing and monopolistic behavior, struggle to effectively regulate the nuanced ways in which digital platforms prioritize their own products. One expert noted, "The traditional antitrust tools are not well suited for the digital economy, where the abuse of market power is often invisible and complex."

b. **Case Study Reflections:** The interviews provided valuable reflections on notable cases, such as the European Commission's investigation into Google's self-preferencing of its comparison shopping service. The experts discussed how the ruling set a precedent but also revealed limitations in addressing ongoing practices. According to one expert, "While the Google case was a landmark, it only scratched the surface of the broader issue of platform power and self-preferencing."

Insights from Digital Economics Experts

Digital economics experts offered insights into how self-preferencing affects market dynamics:

a. **Market Distortion:** Experts explained that self-preferencing distorts market competition by creating unfair advantages for platform-owned products. This distortion often leads to reduced competition and innovation in the market. One economist remarked, "When a dominant platform prioritizes its own products, it disrupts the level playing field, stifling competition and innovation from other players."

b. **Consumer Behavior:** The impact of self-preferencing on consumer behavior is another key point. The experts noted that consumers are often unaware of how their choices are being manipulated by platform algorithms. This lack of transparency can lead to less informed purchasing decisions. An expert stated, "Consumers assume that search results reflect the best options available, but in reality, they are being steered toward products that benefit the platform."

Insights from Consumer Protection Experts

The following consumer protection experts provided perspectives on the implications of self-preferencing for consumer welfare:

a. **Trust erosion:** The interviews revealed that self-preferencing erodes consumer trust in digital platforms. Consumers may feel misled when they discover that search results and recommendations are influenced by the platform's commercial interests rather than objective criteria. One consumer advocate noted, "Self-preferencing undermines the trust that consumers place in digital platforms, as they are not receiving unbiased information."

b. **Policy recommendations:** Experts recommended several policy measures to address the issues associated with self-preferencing. These included increased transparency requirements for algorithms, clearer disclosure of product rankings, and stronger regulatory oversight to ensure fair competition. According to one expert, "Effective policy responses should include transparency in algorithmic decision-making and regulations that prevent platforms from unfairly promoting their products."

5. Regulatory and Policy Responses

Given the significant harm caused by self-preferencing, there is a strong case for regulatory intervention. Current antitrust frameworks, while valuable, are often ill-equipped to address the unique challenges posed by digital platforms. Therefore, new regulatory approaches are needed to ensure that digital markets remain competitive and that consumers are protected from manipulative practices.

5.1. Transparency and Algorithm Accountability

One critical area for regulatory action is enhancing transparency and algorithmic accountability. Platforms should be required to disclose the criteria they use to rank and recommend products and services. Such transparency would help level the playing field for competitors and allow consumers to make more informed decisions. For example, regulators could require platforms to publish detailed information about their algorithms and the factors that influence product rankings and recommendations. This would allow independent auditors to assess whether platforms are engaging in self-preferencing and ensure that consumers are not misled by biased algorithms.

Transparency is crucial for maintaining fairness in digital markets. When platforms such as Google, Amazon, or Facebook use algorithms to prioritize their own products or services, they can manipulate consumer choices and distort market competition. For example, a lack of transparency allows these platforms to conceal how their algorithms are biased in favor of their own offerings, leading to an unfair advantage over competitors (Binns, Veale, Van Kleek, & Shadbolt, 2018). Without transparency, consumers and competitors are left in the dark about the true factors influencing product visibility and rankings, which can erode trust in these platforms and harm the overall market ecosystem.

Transparency not only serves as a tool for fostering consumer trust but also empowers regulators to ensure that platforms are not engaging in anticompetitive practices. By requiring platforms to disclose how their algorithms function and the criteria they use, regulators can more effectively monitor and address any manipulative behaviors (Diakopoulos, 2016). Transparency initiatives, such as algorithmic audits and disclosures, are essential in creating a level playing field where all market participants can compete fairly. While transparency is important, it is not sufficient on its own. Algorithm accountability ensures that platforms are held responsible for the decisions and outcomes produced by their algorithms. This is particularly important in cases where algorithms may unintentionally or deliberately disadvantage certain competitors or consumer groups (Pasquale, 2015). Accountability mechanisms can include independent audits, regulatory oversight, and legal frameworks that require platforms to demonstrate that their algorithms operate fairly and do not harm competition or consumer welfare. Algorithm accountability is also necessary for addressing issues related to bias and discrimination. For example, studies have shown that algorithms can reinforce existing inequalities by favoring certain groups over others, often without explicit intent (Noble, 2018). By holding platforms accountable for the results of their algorithms, regulators can ensure that these tools are used ethically and do not perpetuate unfair practices.

To effectively regulate digital platforms and ensure fair competition, a combination of transparency and accountability measures is necessary. Policymakers should consider implementing the following strategies: a) require platforms to publicly disclose the factors and criteria that influence algorithmic decisions, particularly those related to product rankings and recommendations; b) establish independent bodies to conduct regular audits of platform algorithms, ensuring that they comply with competition laws and do not engage in discriminatory practices; and c) develop legal frameworks that hold platforms accountable for the outcomes produced by their algorithms, including penalties for practices that harm competition or consumer welfare. By adopting these measures, regulators can help create a more transparent and accountable digital marketplace that fosters fair competition and protects consumer interests. Together, these concepts provide a foundation for fair competition and consumer protection in an increasingly algorithm-driven marketplace.

A. Challenges in Implementation

Despite the clear need for transparency and accountability, implementing these principles in practice presents several challenges. One significant obstacle is the complexity and proprietary nature of many algorithms used by digital platforms. Algorithms are often considered trade secrets, and platforms may be reluctant to disclose the details of their operations due to fears of losing competitive advantage or exposing vulnerabilities (Kitchin, 2017). This reluctance makes it difficult for regulators and the public to fully understand how these algorithms work and whether they operate fairly.

Another challenge lies in the technical difficulty of auditing algorithms. Even when platforms are required to disclose information, the sheer complexity of modern algorithms, particularly those involving machine learning, can make it challenging to interpret their decision-making processes. Algorithms that continuously learn and adapt based on new data can also change their behavior over time, complicating efforts to monitor and regulate them (Ananny & Crawford, 2018). This dynamic nature of algorithms means that audits and accountability measures must be ongoing and adaptive to be effective.

Moreover, there is the issue of regulatory capacity. Many regulatory bodies may lack the technical expertise or resources to effectively audit and oversee complex algorithms. This lack of capacity can lead to ineffective enforcement of transparency and accountability requirements, allowing platforms to continue practices that may be harmful to competition or consumers (Zuboff, 2019). To address this, there is a need for greater investment in regulatory capabilities, including the hiring of technical experts and the development of new tools for monitoring and auditing algorithms.

B. The Role of Consumer Advocacy

In addition to regulatory measures, consumer advocacy plays a crucial role in promoting transparency and accountability. Advocacy groups can raise awareness about the potential harms of algorithmic decision-making and push for greater transparency from digital platforms. They can also serve as watchdogs, monitoring the behavior of platforms and holding them accountable when they engage in unfair practices. Consumer advocacy efforts can also contribute to the development of best practices and industry standards for algorithmic transparency. By working with regulators, industry stakeholders, and the public, advocacy groups can help establish norms that encourage fair and transparent algorithmic practices. These efforts can complement regulatory measures and provide additional pressure on platforms to act responsibly.

In the future, the issues of transparency and algorithmic accountability will only become more important as digital platforms continue to grow in influence. As algorithms play an increasingly central role in shaping economic and social outcomes, the need for robust regulatory frameworks that ensure fairness and accountability will become more pressing. Future research and policy development should focus on creating scalable and effective mechanisms for auditing and regulating algorithms, as well as developing new legal and ethical standards for algorithmic decision-making. These will require collaboration between governments, academia, industry, and civil society to ensure that the digital economy operates in a way that is fair, transparent, and accountable to all stakeholders. Overcoming these challenges will require concerted efforts from regulators, industry, and consumer advocates alike. By addressing these issues, we can help create a digital economy that is not only innovative and dynamic but also fair for all participants.

5.2. Platform Neutrality and Fair Competition

Another regulatory approach is the implementation of platform neutrality rules. These rules would require platforms to treat all products and services equally, regardless of their origin. This would prevent platforms from giving preferential treatment to their own offerings and ensure that consumers have access to a wide range of choices. However, enforcing platform neutrality would require significant

resources and expertise. Regulators need to closely monitor platform behavior to ensure compliance, and platforms may resist such regulations, arguing that they limit their ability to innovate and improve their services.

Platform neutrality is vital because digital platforms, such as Google, Amazon, and Facebook, serve as gatekeepers to vast markets. These platforms have the power to control what consumers see and access, which can significantly influence purchasing decisions and market dynamics. For example, when a platform such as Amazon gives preferential treatment to its own products by placing them higher in search results, it can disadvantage other sellers, reducing competition and consumer choice (Zhu & Liu, 2018). This behavior not only harms competitors but also undermines the principle of a fair and open market. Platform neutrality ensures that all businesses, regardless of size, have a fair chance to reach consumers. This is particularly important for SMEs that rely on digital platforms to access wider markets. Without neutrality, these smaller companies may struggle to compete against larger firms that have more resources or closer ties to the platform. Thus, enforcing platform neutrality is essential for preserving competition and innovation in the digital economy.

A. Challenges to Fair Competition

Despite its importance, achieving fair competition in digital markets is challenging. One of the main obstacles is the inherent conflict of interest when platforms both operate in a marketplace and sell their own products within it. This dual role creates incentives for platforms to favor their own products or services, as it allows them to maximize profits and market share (Khan, 2020). For example, when Apple promotes its own apps over third-party alternatives in its App Store, it distorts competition by leveraging its control over the platform to the detriment of other developers (Scott Morton et al., 2019).

The challenge is the lack of transparency in platform operations. Consumers and competitors often do not know how algorithms rank products or how platforms decide which services to promote. This opacity makes it difficult to detect and address anticompetitive practices. As a result, platforms can engage in self-preferencing without facing significant backlash from consumers or regulators (Pasquale & Bracha, 2008). Regulatory bodies face significant challenges in addressing these issues, particularly because digital platforms often operate across multiple jurisdictions, complicating enforcement efforts. Furthermore, existing competition laws may not be fully equipped to address the unique dynamics of digital markets, where traditional notions of market dominance and anticompetitive behavior are not always applicable (Evans & Schmalensee, 2016).

To promote platform neutrality and fair competition, several regulatory and policy responses are necessary: a) Competition laws should be updated to address the specific challenges posed by digital platforms. This may include stricter scrutiny of mergers and acquisitions, particularly those involving major digital platforms, to prevent the further concentration of market power. b) Regulators should require platforms to provide equal treatment to all products and services, regardless of ownership. This could involve mandating transparency in algorithmic rankings and search results to ensure that no entity, including the platform itself, receives an undue advantage. c) Independent audits should be conducted regularly to assess platform practices and ensure compliance with neutrality and competition standards. Regulatory bodies should have the power to impose penalties on platforms that engage in anticompetitive behavior. d) Policies that promote the development of open platforms, where multiple vendors can compete on equal terms, should be encouraged. This can help reduce the dominance of a few large platforms and increase competition. By promoting platform neutrality and updating competition laws, we can create a more equitable digital marketplace that benefits consumers and fosters innovation.

B. Balancing Innovation and Regulation

While regulation is necessary to ensure platform neutrality and fair competition, it is equally important to strike a balance that does not stifle innovation. Digital platforms have been at the forefront of

technological advancements and have significantly contributed to economic growth. Overregulation could hinder the ability of these platforms to innovate and provide value to consumers. Therefore, policymakers must design regulations that protect against competition without imposing undue burdens on platforms that could limit their ability to innovate (Manne & Wright, 2011).

One approach to balancing innovation and regulation is to focus on principles-based regulation, which sets broad standards for behavior rather than prescriptive rules. This allows platforms the flexibility to innovate while ensuring that they adhere to key principles of fairness and neutrality. For example, instead of mandating specific algorithmic designs, regulators could require that platforms demonstrate how their algorithms operate in a nondiscriminatory manner, leaving the technical implementation to the platforms themselves.

C. International Coordination and Harmonization

Given the global nature of digital platforms, regulatory efforts must be coordinated across borders to be effective. Different countries have different approaches to regulating digital markets, which can lead to fragmentation and challenges for both regulators and platforms. For example, the European Union's General Data Protection Regulation (GDPR) has set a high standard for data protection, but it differs significantly from data protection laws in the United States and other regions (Bradford, 2020).

To address this, international cooperation and harmonization of regulations are crucial. By aligning regulatory frameworks, countries can ensure that digital platforms operate under consistent rules globally, reducing the risk of regulatory arbitrage, where platforms might exploit differences in national regulations to their advantage. Initiatives such as the G7 Digital Ministers' discussions and the Organization for Economic Cooperation and Development (OECD) guidelines on platform governance represent steps toward achieving greater international regulatory coherence (Fleischer, 2020). Furthermore, international coordination can help establish best practices and share knowledge on effective regulatory approaches. Countries can learn from each other's experiences in regulating digital markets, which can lead to the development of more effective and harmonized policies.

D. Role of Consumers in Ensuring Fair Competition

Consumers play a critical role in promoting platform neutrality and fair competition. By being aware of how platforms operate and the potential biases in their algorithms, consumers can make more informed choices. Educated consumers are less likely to be manipulated by biased algorithms, which can pressure platforms to maintain fairness in their operations. Consumer awareness campaigns can help educate the public about the importance of platform neutrality and the ways in which platform choices can impact competition. Additionally, consumer feedback and reviews can provide valuable insights into platform practices, which can be used by regulators and advocacy groups to monitor and address potential anticompetitive behavior.

Consumer advocacy groups also have the power to influence regulatory policies by lobbying for stronger protection and by bringing attention to unfair practices. For example, organizations such as the Electronic Frontier Foundation (EFF) and Public Knowledge have been instrumental in advocating for consumer rights in the digital age, including the promotion of net neutrality and platform fairness (Benkler, 2006). By implementing principles-based regulation, encouraging international harmonization, and empowering consumers, policymakers can foster a digital environment that is both competitive and fair. As digital platforms continue to grow in influence, these efforts will be crucial in maintaining an open and dynamic marketplace that benefits all stakeholders.

6. Limitations

A primary limitation of this study is its reliance on publicly accessible data, which may not fully reflect the internal decision-making processes of digital platforms. Although regulatory investigations and journalistic reports offer valuable insights, limited access to proprietary data and algorithms restricts the ability to assess the extent of self-preferencing comprehensively. The study's focus on major platforms such as Google, Amazon, and Apple further limit the generalizability of the findings to other digital platforms. While these companies illustrate broader trends, specific practices and impacts may differ across various platforms and markets. The qualitative nature of the analysis, particularly thematic and comparative analyses, introduces an element of subjectivity, despite efforts to maintain objectivity and rigor. Additionally, the rapidly evolving digital market—with new regulatory developments, technological advancements, and shifting market dynamics—means that the study's findings may become outdated as platforms adapt their practices in response to regulatory pressures.

7. Conclusion

The practice of self-preferencing via digital platforms significantly undermines consumer welfare and the principles of fair competition. Through algorithmic manipulation, platforms such as Google, Amazon, and Apple can consolidate their market dominance, inhibit competition, and stifle innovation. This distortion of the competitive landscape results in a market that is less dynamic, innovative, and responsive to consumer needs. For example, Google's search result manipulation, Amazon's promotion of private-label products, and Apple's preferential treatment of its apps exemplify the widespread nature of self-preferencing. These actions erode consumer trust, reduce market diversity, and ultimately lead to higher prices and lower-quality offerings.

Given the profound harm inflicted by self-preferencing, robust regulatory intervention is imperative. Measures such as enhancing transparency, enforcing algorithmic accountability, and implementing platform neutrality are critical to preserving competitive digital markets and protecting consumers from manipulation. However, such regulation necessitates a deep understanding of the digital economy and substantial enforcement resources. In a world increasingly dominated by a few powerful platforms, safeguarding fairness, transparency, and competition is more crucial than ever. Without decisive action, these platforms will continue to consolidate their dominance, further restricting consumer choice. Policymakers must act decisively to ensure that the digital economy remains a space where competition flourishes, innovation thrives, and consumers retain true control over their choices.

8. Acknowledgment

No financial conflicts exist with any digital platforms observed in this study, and no agreements were required between digital platform providers and the researchers regarding the findings. We extend our gratitude to the expert respondents, whose anonymity has been preserved as requested, and to other stakeholders who participated in the data collection. All the authors contributed equally to the development of this manuscript.

References

- Ananny, M., & Crawford, K. (2018). Seeing Without Knowing: Limitations of the Transparency Ideal and Its Application to Algorithmic Accountability. *New Media & Society, 20*(3), 973-989. https://dx.doi.org/10.1177/1461444816676645
- Autorità Garante della Concorrenza e del Mercato. (2020). Misleading Practices by Booking.com. [Online] Available at: https://www.agcm.it/dotcmsdoc/allegati-news/PS11309_chiusura.pdf

- Binns, R., Veale, M., Van Kleek, M., & Shadbolt, N. (2018). 'It is Reducing a Human Being to a Percentage': Perceptions of Justice in Algorithmic Decisions. *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*, 1-14. https://doi.org/10.1145/3173574.3173951
- Pasquale, F., & Bracha, O. (2008). Federal Search Commission? Access, Fairness, and Accountability in the Law of Search. Cornell Law Review, 93(6), 1149-1210. ISBN: 9781509544707, 1509544704
- Cunningham, C., Ederer, F., & Ma, S. (2021). Killer Acquisitions. *Journal of Political Economy*, 129(3), 649-702. https://doi.org/10.1086/712506
- Diakopoulos, N. (2016). Accountability in Algorithmic Decision Making. *Communications of the ACM, 59*(2), 56-62. https://doi.org/10.1145/2844110
- European Commission. (2017). Antitrust: Commission fines Google €2.42 billion for abusing dominance as search engine by giving illegal advantage to own comparison shopping service. [Online] Available at: https://ec.europa.eu/commission/presscorner/detail/en/IP_17_1784
- European Commission. (2020). Antitrust: Commission sends Statement of Objections to Apple on App Store rules for music streaming providers. [Online] Available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1073
- Evans, D. S., & Schmalensee, R. (2016). Matchmakers: The New Economics of Multisided Platforms. Harvard Business Review Press. ISBN: 9781633691728
- Khan, L. (2017). *Amazon's Antitrust Paradox*. Yale Law Journal, 126 (3), 710-805. ISSN: 0044-0094. Available at: SSRN: https://ssrn.com/abstract=2911742
- Kitchin, R. (2016). Thinking Critically About and Researching Algorithms. *Information, Communication & Society, 20*(1), 14-29. https://doi.org/10.1080/1369118X.2016.1154087
- Motta, M., & Peitz, M. (2021). *Big tech mergers*. Information Economics and Policy, Volume 54, 2021, 100868, ISSN 0167-6245, https://doi.org/10.1016/j.infoecopol.2020.100868.
- Noble, S. U. (2018). *Algorithms of Oppression: How Search Engines Reinforce Racism*. New York: New York University Press. Pp. 256. ISBN: 9781479837243
- Pasquale, F. (2015). *The Black Box Society: The Secret Algorithms That Control Money and Information*. Harvard University Press. ISBN: 0674368274, 9780674368279
- Scott Morton, F., Bouvard, M., & Sullivan, J. (2019). Apple's App Store and Its Role as a Digital Gatekeeper. Yale School of Management. https://doi.org/10.2139/ssrn.3397795
- Thaler, R. H., & Sunstein, C. R. (2008). *Nudge: Improving Decisions About Health, Wealth, and Happiness*. Yale University Press. The Social Science Journal. Vol. 45(4):700–701. https://doi.org/ 10.1016/j.soscij.2008.09.003
- Zhu, F., & Liu, Q. (2018). Competing with Complementors: An Empirical Look at Amazon.com. *Strategic Management Journal*, 39(10), 2618-2642. https://doi.org/10.1002/smj.2922
- Zuboff, S. (2019). *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*. New York: PublicAffairs. ISBN: 9781610395694