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Consumer Protection Against Fraudulent Practices by Online Motorcycle Taxi Drivers in Medan City

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Abstract: The rapid growth of online motorcycle taxi services in Indonesia has significantly transformed urban transportation systems, including in Medan City. Alongside this development, various fraudulent practices by online motorcycle taxi drivers have emerged, such as fare manipulation, fictitious orders, service cancellations after payment, and deviations from agreed routes, which potentially harm consumers. This study examines consumer protection against fraudulent practices by online motorcycle taxi drivers in Medan City, focusing on the adequacy and effectiveness of the existing legal framework. This research employs a normative juridical method supported by a socio-legal and empirical field research approach. Primary legal materials include Law Number 8 of 1999 on Consumer Protection, transportation regulations, and platform-based service policies, while secondary materials consist of scholarly articles and legal commentaries on consumer protection in digital transportation services. Field research was conducted through interviews with consumers, online motorcycle taxi drivers, and local transportation officials in Medan City, as well as analysis of reported consumer complaints. The findings indicate that although Indonesian consumer protection law formally guarantees consumers' rights to safety, accurate information, and fair treatment, its implementation in online motorcycle taxi services remains inadequate. Weak regulatory supervision, limited consumer awareness, and unclear responsibility-sharing between drivers and platform providers contribute to ineffective legal protection. This study contributes to legal scholarship by identifying regulatory gaps and enforcement challenges in platform-based transportation services and recommends strengthening regulatory oversight, enhancing platform accountability, and improving consumer education to ensure effective consumer protection and sustainable development of online transportation services in Medan City.

Keywords: Consumer Protection, Fraudulent Practices, Online Transportation

1. Introduction

The rapid growth of online motorcycle taxi services in Indonesia has significantly reshaped urban transportation systems and everyday mobility patterns. In cities such as Medan, online motorcycle taxis have become an integral part of daily life, providing flexible, affordable, and accessible transportation for various social groups.[1] This expansion reflects broader digital transformation processes in the service sector, where technology mediates interactions between consumers and service providers. However, alongside these benefits, a range of fraudulent practices has increasingly emerged, including unilateral fare increases, fictitious orders,[2] service cancellations after payment, and unauthorized route deviations.[3] Such practices expose consumers to financial losses, inconvenience, and psychological discomfort. The frequency of consumer complaints indicates growing public concern regarding fairness and

[1] Yunhong Che et al., "Predictive Battery Health Management With Transfer Learning and Online Model Correction," *IEEE Transactions on Vehicular Technology* 70, no. 2 (February 2021): 1269–77, https://doi.org/10.1109/TVT.2021.3055811.

[2] Heesup Han, "Consumer Behavior and Environmental Sustainability in Tourism and Hospitality: A Review of Theories, Concepts, and Latest Research," *Journal of Sustainable Tourism* 29, no. 7 (July 3, 2021): 1021–42, https://doi.org/10.1080/09669582.2021.1903019.

[3] T. Angelin Swetha et al., "A Comprehensive Review On Polylactic Acid (PLA) – Synthesis, Processing And Application In Food Packaging," *International Journal of Biological Macromolecules* 234 (April 2023): 123715, https://doi.org/10.1016/j.ijbiomac.2023.123715.

accountability in digital transportation services. Trust, which is essential in platform-based systems, becomes vulnerable when service integrity is compromised.[4] These social facts demonstrate that consumer protection in online transportation services is not merely a technical issue but a pressing socio-legal problem. Therefore, this phenomenon warrants serious academic and regulatory attention.[5]

From a literature perspective, numerous studies have examined online transportation services from economic, technological, and labor-related viewpoints. Scholars have explored platform efficiency,[6] pricing algorithms, driver incentives, and employment relationships in the gig economy.[7] Legal studies have also addressed contractual relationships and regulatory frameworks governing digital platforms. Nevertheless, many of these studies focus predominantly on normative legal provisions or technical platform governance, without sufficiently examining how consumer protection laws function in practice.[8] Empirical research often relies on surveys or aggregated data, providing limited insight into enforcement realities. As a result, existing literature tends to overlook the gap between formal legal guarantees and their empirical implementation.[9] This shortcoming is particularly evident in local contexts, where enforcement capacity and institutional coordination vary. Consequently, there remains a lack of integrated socio-legal analysis that connects statutory regulation with everyday consumer experiences in platform-based transportation services.[10]

An evaluation of previous studies reveals important contributions as well as significant limitations that shape the positioning of this research. Prior research has successfully identified regulatory gaps and enforcement weaknesses in digital transportation services.[11] However, many studies treat fraudulent practices as incidental behavior rather than as outcomes of structural and regulatory conditions. Limited attention has been given to the ambiguity of responsibility-sharing between drivers and platform providers.[12] Moreover, few studies combine normative legal analysis with in-depth field data to capture how laws operate in practice. This study builds upon earlier research by addressing these limitations through a socio-legal approach. By integrating empirical findings from Medan City with doctrinal legal analysis, the study positions itself to examine consumer protection more comprehensively. This evaluative stance allows the research to contribute a more grounded understanding of regulatory effectiveness in digital transportation ecosystems.[13]

The purpose of this study is to examine how consumer protection law addresses fraudulent practices committed by online motorcycle taxi drivers in Medan City.[14] Based on these considerations, the study

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[4] Carlos Llopis-Albert, Francisco Rubio, and Francisco Valero, "Impact Of Digital Transformation On The Automotive Industry," *Technological Forecasting and Social Change* 162 (January 2021): 120343, https://doi.org/10.1016/j.techfore.2020.120343.

[5] C.M. Costa et al., "Recycling And Environmental Issues Of Lithium-Ion Batteries: Advances, Challenges And Opportunities," *Energy Storage Materials* 37 (May 2021): 433–65, https://doi.org/10.1016/j.ensm.2021.02.032.

[6] Anil Kumar, Gyan Prakash, and Gaurav Kumar, "Does Environmentally Responsible Purchase Intention Matter For Consumers? A Predictive Sustainable Model Developed Through An Empirical Study," *Journal of Retailing and Consumer Services* 58 (January 2021): 102270, https://doi.org/10.1016/j.jretconser.2020.102270.

[7] Tapan Kumar Panda et al., "Social and Environmental Sustainability Model on Consumers' Altruism, Green Purchase Intention, Green Brand Loyalty and Evangelism," *Journal of Cleaner Production* 243 (January 2020): 118575, https://doi.org/10.1016/j.jclepro.2019.118575.

[8] Riley E.J. Schnurr et al., "Reducing Marine Pollution from Single-Use Plastics (SUPs): A Review," *Marine Pollution Bulletin* 137 (December 2018): 157–71, https://doi.org/10.1016/j.marpolbul.2018.10.001.

[9] Chris Jay Hoofnagle, Bart van der Sloot, and Frederik Zuiderveen Borgesius, "The European Union General Data Protection Regulation: What It Is and What It Means," *Information & Communications Technology Law* 28, no. 1 (January 2, 2019): 65–98, https://doi.org/10.1080/13600834.2019.1573501.

[10] Shaizatulaqma Kamalul Ariffin, Thenmoli Mohan, and Yen-Nee Goh, "Influence of Consumers' Perceived Risk on Consumers' Online Purchase Intention," *Journal of Research in Interactive Marketing* 12, no. 3 (October 2018): 309–27, https://doi.org/10.1108/JRIM-11-2017-0100.

[11] Gyan Prakash and Pramod Pathak, "Intention to Buy Eco-Friendly Packaged Products Among Young Consumers Of India: A Study on Developing Nation," *Journal of Cleaner Production* 141 (January 2017): 385–93, https://doi.org/10.1016/j.jclepro.2016.09.116.

[12] Nigel Dudley and Sasha Alexander, "Agriculture and Biodiversity: A Review," *Biodiversity* 18, no. 2–3 (July 3, 2017): 45–49, https://doi.org/10.1080/14888386.2017.1351892.

[13] Sheetal Menon and Karuna Jain, "Blockchain Technology for Transparency in Agri-Food Supply Chain: Use Cases, Limitations, and Future Directions," *IEEE Transactions on Engineering Management* 71 (2024): 106–20, https://doi.org/10.1109/TEM.2021.3110903.

[14] Kerstin Denecke, Richard May, and Octavio Rivera Romero, "Potential of Large Language Models in Health Care: Delphi Study," *Journal of Medical Internet Research* 26 (May 2024): e52399, https://doi.org/10.2196/52399.

seeks to assess the adequacy and effectiveness of the existing legal framework in ensuring legal certainty, fairness, and effective consumer protection. It also investigates the factors that contribute to the persistence of fraudulent practices despite the presence of formal regulatory safeguards.[15] This study argues that weak regulatory enforcement, ambiguous platform accountability, and limited consumer legal awareness collectively undermine the effectiveness of consumer protection mechanisms. By advancing this argument, the research aims to bridge normative legal analysis with empirical realities observed in the field. Furthermore, this study seeks to contribute to the conceptual and practical development of consumer protection policies in the context of platform-based transportation services. Ultimately, the research aspires to strengthen legal governance and support the development of sustainable, fair, and trustworthy digital transportation systems in Indonesia.

2. Method

This study employs a normative juridical research method supported by a socio-legal and qualitative field research approach to examine consumer protection against fraudulent practices by online motorcycle taxi drivers in Medan City. The research was conducted over a four-month period, from March to June 2024. Primary legal materials include Law Number 8 of 1999 on Consumer Protection, relevant transportation regulations, and platform-based service policies governing online motorcycle taxi operations. Secondary legal materials consist of peer-reviewed journal articles, books, and legal commentaries related to consumer protection and digital transportation services. Field data were collected through semi-structured interviews involving 25 consumers, 10 online motorcycle taxi drivers, and 5 local transportation and consumer protection officials in Medan City. Participants were selected using purposive sampling to ensure relevance to the research objectives. Data collection took place at public locations and government offices, and all interviews were conducted directly by the researcher to maintain consistency and reliability.

The data analysis was carried out using a qualitative descriptive-analytical technique. Legal materials were analyzed through statutory and conceptual approaches to assess normative consistency and regulatory adequacy, while field data were examined using thematic analysis to identify recurring patterns related to fraudulent practices, regulatory enforcement, and consumer awareness. Interview transcripts were systematically coded and categorized to facilitate interpretation and comparison between normative provisions and empirical realities. Data processing and organization were supported by NVivo qualitative analysis software, selected for its reliability in managing complex qualitative datasets. Methodological rigor was ensured through data triangulation between legal sources, interview findings, and documented consumer complaints. Validity was strengthened by cross-checking participant responses, while reliability was maintained through consistent interview protocols and analytical procedures. This integrated methodological framework enables a comprehensive understanding of both legal norms and their practical implementation in protecting consumers in online transportation services.

3. Result and Discussion

3.1. Determinants of Fraudulent Practices in Online Motorcycle Taxi Services

Fraudulent practices in online motorcycle taxi services frequently emerge in the form of unilateral price increases conducted outside the application system, particularly during peak hours or adverse weather conditions. Such practices directly violate the principles of transparency and fairness that underpin consumer protection law, as consumers are compelled to accept prices that differ from those initially agreed upon through digital platforms.[16] Empirical findings indicate that drivers often justify these actions by citing increased operational risks or demand imbalances, yet these justifications lack legal basis. The

[15] Rabia Musheer Aziz et al., "Modified Genetic Algorithm with Deep Learning for Fraud Transactions of Ethereum Smart Contract," *Applied Sciences* 13, no. 2 (January 2023): 697, https://doi.org/10.3390/app13020697.

[16] T. Shahana, Vilvanathan Lavanya, and Aamir Rashid Bhat, "State of the Art in Financial Statement Fraud Detection: A Systematic Review," *Technological Forecasting and Social Change* 192 (July 2023): 122527, https://doi.org/10.1016/j.techfore.2023.122527.

absence of effective monitoring mechanisms allows such conduct to persist with minimal sanctions. This situation reflects a structural imbalance of bargaining power between drivers and consumers, where consumers are placed in a vulnerable position due to situational urgency.[17] Consequently, unilateral price manipulation undermines contractual certainty and weakens consumer trust in platform-based transportation services. From a legal perspective, this practice illustrates the failure of regulatory enforcement to ensure compliance with standardized pricing mechanisms mandated by consumer protection principles.

Another prevalent form of fraudulent behavior is the creation of fictitious orders and false service confirmations aimed at obtaining incentives or payments without providing actual services. This practice constitutes deliberate deception and represents a serious breach of good faith in contractual relations. Field data reveal that such actions are often motivated by incentive schemes implemented by platform providers, which unintentionally encourage exploitative behavior among drivers. Consumers affected by fictitious orders experience both financial losses and difficulties in seeking effective redress due to complex complaint procedures. Moreover, the limited transparency of platform algorithms further obscures accountability and complicates legal verification of violations. As a result, these deceptive practices not only harm individual consumers but also distort the integrity of digital transportation systems. Legally, the persistence of fictitious orders highlights the inadequacy of existing mechanisms to prevent fraud in technology-mediated service relationships.[18]

Unilateral service cancellations after payment also represent a significant manifestation of fraudulent practices in online motorcycle taxi services. In many cases, drivers cancel trips without reasonable justification after consumers have completed payment, causing direct financial loss and non-material harm such as inconvenience and psychological distress. This practice undermines the principle of contractual certainty, as the agreed service is not fulfilled despite the existence of a valid transaction. Empirical evidence indicates that platform-based dispute resolution mechanisms often fail to provide timely or proportional remedies.[19] The lack of strict sanctions against unjustified cancellations further normalizes such behavior. Consequently, consumers are left without effective legal protection, reinforcing perceptions of regulatory weakness. From a broader perspective, recurring unilateral cancellations erode public confidence in digital transportation services and emphasize the urgent need for stronger enforcement of consumer protection norms in platform-based economies.

Route deviations without consumer consent constitute a common form of service misconduct in online motorcycle taxi operations. Such deviations often result in increased travel time and higher costs for consumers, particularly when fare calculations are based on distance or duration. Empirical findings indicate that drivers may alter routes to avoid traffic, pursue personal convenience, or increase fares without obtaining prior consumer approval. This practice reflects weak adherence to service agreements established through digital platforms, where route transparency is a fundamental component of the contractual relationship. From a consumer protection perspective, unauthorized route changes undermine the principle of informed consent and violate the obligation to provide services in accordance with agreed terms. The absence of real-time monitoring and effective sanctions further facilitates this behavior. Consequently, route deviations contribute to consumer dissatisfaction and erode trust in the reliability of platform-based transportation services.[20]

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[17] June Wang et al., "Identifying and Preventing Fraudulent Responses in Online Public Health Surveys: Lessons Learned During The COVID-19 Pandemic," ed. Animesh Jain, *PLOS Global Public Health* 3, no. 8 (August 23, 2023): e0001452, https://doi.org/10.1371/journal.pgph.0001452.

[18] Arturo Bris et al., "Knights, Raiders, and Targets - The Impact of the Hostile Takeover - Coffee, JC, Lowenstein, L, Rose-Ackerman, S," *Journal oF Banking & Finance* 37, no. 1 (2021).

[19] Julián Lozano - Castellón et al., "Extra Virgin Olive Oil: A Comprehensive Review of Efforts to Ensure Its Authenticity, Traceability, and Safety," *Comprehensive Reviews in Food Science and Food Safety* 21, no. 3 (May 2022): 2639 – 64, https://doi.org/10.1111/1541-4337.12949.

[20] Ajay Kumar et al., "Fraudulent Review Detection Model Focusing on Emotional Expressions and Explicit Aspects: Investigating the Potential of Feature Engineering," *Decision Support Systems* 155 (April 2022): 113728, https://doi.org/10.1016/j.dss.2021.113728.

Economic pressure experienced by drivers, particularly under incentive-based systems imposed by platform providers, significantly influences the emergence of fraudulent behavior. Field data reveal that performance targets, bonus schemes, and algorithmic evaluations often prioritize quantity of trips over service quality. As a result, drivers may prioritize income maximization strategies, even when such actions conflict with service ethics and legal obligations. This structural pressure creates a moral hazard in which compliance with consumer protection principles becomes secondary to financial survival. From a legal standpoint, the incentive-driven operational model raises questions regarding the indirect responsibility of platform providers in facilitating unethical practices. The findings suggest that without regulatory intervention, economic pressures will continue to distort service behavior and undermine consumer rights in digital transportation ecosystems.[21]

Limited supervision and ambiguous responsibility-sharing between drivers and platform operators further enable the persistence of fraudulent practices. Regulatory authorities often lack effective oversight mechanisms tailored to platform-based transportation services, resulting in weak enforcement of consumer protection norms. At the same time, platform providers frequently position themselves as intermediaries, deflecting legal responsibility onto individual drivers. This fragmented accountability structure creates legal uncertainty and reduces the effectiveness of sanctions. Empirical evidence shows that consumers often face difficulties in identifying responsible parties when disputes arise. Consequently, the absence of clear legal obligations for platform providers exacerbates regulatory gaps and weakens consumer protection. Addressing this issue requires clearer allocation of responsibility and stronger institutional coordination to ensure effective accountability in digital transportation services.[22]

3.2. Transformative Impact on Consumer Protection Frameworks

Legal uncertainty for consumers arises primarily from the inconsistent enforcement of consumer protection regulations within platform-based transportation services. Although Indonesian consumer protection law formally guarantees consumers' rights, its application in online motorcycle taxi services remains fragmented and uneven. Empirical findings indicate that regulatory responses to violations vary significantly depending on the platform, the nature of the complaint, and institutional discretion. Sanctions imposed on drivers or platforms are often unclear, delayed, or resolved informally, thereby weakening their deterrent effect. Consumers frequently face ambiguity regarding applicable legal procedures and the appropriate authority to which complaints should be addressed. This lack of clarity diminishes legal predictability and undermines the principle of legal certainty. As a result, consumers may perceive formal legal mechanisms as ineffective or burdensome. Such perceptions discourage the pursuit of legal remedies and normalize acceptance of unfair treatment. Over time, inconsistent enforcement erodes the authority of consumer protection law. Consequently, legal norms risk becoming symbolic rather than operative within platform-based transportation services.[23]

The erosion of public trust in online transportation services represents a critical social implication of persistent fraudulent practices. Trust functions as the foundation of digital platform relationships, particularly where transactions rely on algorithmic systems and non-face-to-face interactions. Repeated consumer exposure to unfair pricing, unauthorized route deviations, service cancellations, and deceptive practices gradually undermines confidence in platform reliability. Empirical data suggest that consumers who experience unresolved disputes develop skepticism toward both drivers and platform providers. This declining trust affects user loyalty and reduces willingness to engage with digital transportation services. Beyond individual behavior, the erosion of trust has broader societal consequences, including resistance to digital innovation. When trust deteriorates, platforms struggle to maintain legitimacy as reliable public

[21] Sophie Lawrence et al., "The 11 Sins of Seafood: Assessing a Decade of Food Fraud Reports in the Global Supply Chain," *Comprehensive Reviews in Food Science and Food Safety* 21, no. 4 (July 2022): 3746–69, https://doi.org/10.1111/1541-4337.12998.

[22] Wen Zhang et al., "A Novel Approach For Fraudulent Reviewer Detection Based on Weighted Topic Modelling And Nearest Neighbors with Asymmetric Kullback–Leibler Divergence," *Decision Support Systems* 157 (June 2022): 113765, https://doi.org/10.1016/j.dss.2022.113765.

[23] Sotirios Bisdas et al., "Artificial Intelligence in Medicine: A Multinational Multi-Center Survey on the Medical and Dental Students' Perception," *Frontiers in Public Health* 9 (December 2021), https://doi.org/10.3389/fpubh.2021.795284.

service alternatives. In the long term, weakened public trust threatens the sustainability of online transportation ecosystems. This condition emphasizes the importance of accountability and transparency in restoring confidence. Without trust, the digital transportation model risks losing its social acceptance.

Marginalization of consumer rights becomes evident when complaint mechanisms are inaccessible, inefficient, or inadequately resolved. Many consumers encounter procedural barriers, including complex application interfaces, limited response times, and lack of transparency in dispute handling. Even when complaints are formally submitted, resolutions often favor platform interests over consumer restitution. This imbalance reflects unequal power relations between consumers, drivers, and platform operators. Empirical findings indicate that consumers rarely receive proportional compensation or corrective action. As a result, consumers' substantive rights are reduced to formal declarations without effective enforcement. This condition weakens the remedial function of consumer protection law. Moreover, ineffective complaint mechanisms discourage consumer participation in accountability processes. Over time, consumer passivity reinforces systemic injustice within digital service environments. Strengthening accessible and fair complaint systems is therefore essential. Without effective remedies, consumer rights remain marginalized in platform-based transportation services.[24]

Regulatory gaps in platform accountability highlight the urgent need for clearer legal positioning of platform providers as responsible business actors rather than mere intermediaries. Although platform companies exert significant control over pricing systems, incentive structures, and service standards, they often deny direct responsibility for fraudulent practices committed by drivers. This legal ambiguity allows platforms to shift liability onto individual service providers, leaving consumers without effective avenues for redress. Empirical findings demonstrate that dispute resolution processes are predominantly managed internally by platforms, with limited transparency and external oversight. Such conditions weaken the enforceability of consumer protection law and undermine accountability mechanisms. From a legal perspective, treating platforms solely as intermediaries is no longer adequate in the context of digital economies. The absence of explicit statutory obligations for platform providers creates regulatory loopholes that facilitate non-compliance.[25] Addressing these gaps requires redefining platforms as accountable business entities. Clear legal positioning would strengthen consumer protection and enhance regulatory effectiveness.

The necessity for integrated regulatory reform emerges as a transformative implication of this study. Current regulations governing consumer protection, transportation services, and digital platforms operate in a fragmented manner, resulting in overlapping authority and inconsistent enforcement. Empirical data indicate that regulatory institutions often lack coordination, leading to unclear jurisdictional boundaries and weak supervision. Harmonization of legal frameworks is essential to ensure coherent governance of platform-based transportation services.[26] Integrating consumer protection law with transportation regulations and digital governance principles would enhance legal certainty and accountability. Such reform would also enable regulators to respond more effectively to evolving technological and economic dynamics. A unified regulatory approach would reduce compliance ambiguity for platforms and drivers alike. Moreover, integrated reform would strengthen enforcement capacity by clarifying institutional roles. This transformation is critical for adapting legal systems to the realities of platform-based service models.

[24] Rafael Basso et al., "Dynamic Stochastic Electric Vehicle Routing with Safe Reinforcement Learning," *Transportation Research Part E: Logistics and Transportation Review* 157 (January 2022): 102496, https://doi.org/10.1016/j.tre.2021.102496.

[25] Nan Piao et al., "Challenges and Development of Lithium-Ion Batteries for Low Temperature Environments," *ETransportation* 11 (February 2022): 100145, https://doi.org/10.1016/j.etran.2021.100145.

[26] Sanhita Das et al., "Impact Of COVID-19: A Radical Modal Shift From Public To Private Transport Mode," *Transport Policy* 109 (August 2021): 1–11, https://doi.org/10.1016/j.tranpol.2021.05.005.

Strengthening consumer awareness and digital legal literacy represents a key transformative strategy for improving consumer protection. Empirical findings reveal that many consumers lack adequate understanding of their legal rights and available complaint mechanisms. This knowledge gap limits their ability to challenge unfair practices and seek effective remedies. Enhancing consumer education through public campaigns and digital literacy programs would empower users to make informed decisions. Increased awareness also encourages ethical service practices by creating social and legal pressure on drivers and platforms.[27] From a broader perspective, informed consumers contribute to more balanced power relations within digital service ecosystems. Legal literacy strengthens participatory accountability and supports regulatory enforcement. Ultimately, empowering consumers through education promotes trust, fairness, and sustainability. Such transformation is essential for the long-term development of online transportation services in Indonesia.

3.3. Consumer Protection Challenges in Platform-Based Transportation Services

The results of this study demonstrate that fraudulent practices in online motorcycle taxi services in Medan City remain prevalent and systematically affect consumer rights. Empirical data obtained from field interviews and normative legal analysis reveal recurring patterns of fare manipulation, fictitious orders, unilateral service cancellations, and unauthorized route deviations. These practices persist despite the existence of a formal legal framework under Law Number 8 of 1999 on Consumer Protection and relevant transportation regulations. The findings indicate a clear discrepancy between legal norms and their implementation in practice. Consumer complaints are predominantly resolved through internal platform mechanisms, which often lack transparency and procedural fairness. Access to formal legal remedies is therefore limited and underutilized. This condition places consumers in a structurally vulnerable position within digital transportation ecosystems. The results also reflect the limited deterrent effect of existing regulations. Overall, the findings underscore the inadequate effectiveness of current consumer protection mechanisms in addressing platform-based service violations.

The emergence of fraudulent practices is influenced by multiple interrelated factors identified through empirical reflection.[28] Economic pressure on drivers, particularly under incentive-based performance systems, encourages behavior focused on income maximization rather than service ethics and legal compliance. Platform algorithms and bonus structures indirectly incentivize risk-taking and opportunistic conduct. In addition, weak regulatory supervision and the absence of clear operational standards defining platform accountability reduce the likelihood of effective enforcement.[29] Drivers often perceive sanctions as inconsistent, negotiable, or easily avoided, which diminishes their compliance motivation. Furthermore, limited consumer legal awareness and the complexity of complaint procedures discourage consumers from pursuing formal remedies. These combined factors create a permissive regulatory environment that tolerates non-compliance.[30] As a result, fraudulent practices become normalized within daily service interactions. This reflection highlights the systemic nature of the problem rather than isolated individual misconduct.

The impacts of fraudulent practices extend beyond individual consumer losses and affect the broader legal system. At the consumer level, such practices result in financial harm, psychological discomfort, and declining trust in online transportation services. Repeated negative experiences reduce consumer confidence in both drivers and platform providers. At the legal level, ineffective enforcement undermines the principles of legal certainty, justice, and accountability that form the foundation of consumer protection law. The increasing reliance on informal dispute resolution mechanisms marginalizes formal legal institutions and weakens their authority. This situation diminishes the preventive and corrective

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[27] Che et al., "Predictive Battery Health Management With Transfer Learning and Online Model Correction."

[28] Zhenhua Zhang et al., "A Deep Learning Approach For Detecting Traffic Accidents From Social Media Data," *Transportation Research Part C: Emerging Technologies* 86 (January 2018): 580–96, https://doi.org/10.1016/j.trc.2017.11.027.

[29] Md Mahmudur Rahman et al., "Assessing The Utility Of TAM, TPB, and UTAUT for Advanced Driver Assistance Systems Assessing The Utility Of TAM, TPB, and UTAUT for Advanced Driver Assistance Systems," *Accident Analysis & Prevention* 108 (November 2017): 361–73, https://doi.org/10.1016/j.aap.2017.09.011.

[30] Pamela Wicker, "The Carbon Footprint of Active Sport Participants," *Sport Management Review* 22, no. 4 (October 2019): 513–26, https://doi.org/10.1016/j.smr.2018.07.001.

functions of consumer law. Over time, public confidence in regulatory governance within the digital economy may erode. These findings demonstrate that fraudulent practices pose not only economic risks but also institutional and normative challenges for consumer protection in platform-based transportation services.

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• Comparison with Previous Studies When compared with previous studies on consumer protection in digital transportation services, this research reveals both consistencies and divergences. Similar to earlier findings, this study confirms the existence of regulatory gaps and weak enforcement mechanisms. However, unlike studies that emphasize technological or contractual issues, this research highlights the socio-legal dimension, particularly the ambiguity of responsibility-sharing between drivers and platform providers. The incorporation of field data from Medan City also provides localized empirical insights that extend beyond predominantly normative or survey-based studies, thereby enriching existing literature. • Policy and Regulatory Recommendations Based on the findings and analysis, this study recommends strengthening regulatory oversight through clearer legal obligations for platform providers as active business actors. Conceptually, consumer protection frameworks must adapt to platform-based service models by integrating digital accountability principles. Methodologically, future research should adopt mixed-method approaches to enhance empirical depth. From a policy perspective, improving consumer education, simplifying complaint mechanisms, and enforcing proportional sanctions against violations are essential steps toward ensuring effective consumer protection and sustainable development of online transportation services.

When compared with previous studies on consumer protection in digital transportation services, this research demonstrates both notable similarities and important distinctions. Consistent with earlier findings, the study confirms the persistence of regulatory gaps and weak enforcement mechanisms within platform-based transportation services. Prior research has similarly identified challenges related to consumer vulnerability and ineffective dispute resolution. However, unlike studies that primarily focus on technological features, contractual arrangements, or algorithmic governance, this research emphasizes the socio-legal dimension of consumer protection. In particular, it highlights the ambiguity of responsibility-sharing between drivers and platform providers as a central issue. The inclusion of empirical field data from Medan City offers localized insights that are often absent from predominantly normative or survey-based studies. This empirical perspective reveals how legal norms are interpreted and applied in daily practice. Consequently, the study contributes to existing literature by bridging normative legal analysis with socio-legal realities. Such an approach enriches understanding of consumer protection challenges in digital transportation contexts.

Based on the findings and discussion, this study proposes several policy and regulatory recommendations aimed at improving consumer protection in platform-based transportation services. Strengthening regulatory oversight is essential, particularly by establishing clearer legal obligations for platform providers as active business actors rather than passive intermediaries. Conceptually, consumer protection frameworks must evolve to accommodate digital service models by incorporating principles of platform accountability and transparency. Methodologically, future research should adopt mixed-method approaches to enhance empirical depth and capture diverse stakeholder perspectives. From a policy standpoint, improving consumer education and digital legal literacy is crucial to empower users and promote informed decision-making. Simplifying and standardizing complaint mechanisms would also enhance access to effective remedies. Additionally, enforcing proportional and consistent sanctions against violations can strengthen deterrence. Together, these measures support sustainable development and public trust in online transportation services.

4. Conclusion

This This study concludes that consumer protection against fraudulent practices committed by online motorcycle taxi drivers in Medan City has not been effectively implemented, despite the existence of a comprehensive legal framework. The findings demonstrate that fraudulent practices such as fare manipulation, fictitious orders, unilateral service cancellations, and route deviations continue to occur and directly harm consumers. Although Law Number 8 of 1999 on Consumer Protection formally guarantees consumers' rights to safety, accurate information, and fair treatment, its application in platform-based transportation services remains limited. Weak regulatory supervision, insufficient enforcement mechanisms, and fragmented responsibility between drivers and platform providers contribute to legal uncertainty. Field findings further reveal that many consumers lack adequate awareness of their legal rights and available complaint mechanisms, while platform providers tend to prioritize internal dispute resolution over legal accountability. As a result, the protective objectives of consumer law have not been fully realized in the context of online motorcycle taxi services, indicating a significant gap between normative legal provisions and their empirical implementation.

The significance of this study lies in its contribution to the development of consumer protection law within the rapidly evolving digital transportation sector. Conceptually, this research enriches legal discourse by integrating normative analysis with socio-legal field data, offering a more holistic understanding of consumer vulnerability in platform-based services. Methodologically, the combined normative and empirical approach provides a replicable framework for examining legal effectiveness in similar digital service contexts. Theoretically, this study reinforces the importance of fairness, accountability, and legal certainty as foundational principles in regulating online transportation platforms. By identifying regulatory gaps and enforcement challenges, this research offers valuable insights for policymakers, regulators, and platform operators in strengthening consumer protection mechanisms. Ultimately, the study supports the formulation of more responsive and accountable legal policies to ensure sustainable development and public trust in online transportation services in Indonesia.

Declarations

Author Contribution Statement

Vira Nur Fadillah Lubis was responsible for the conceptualization, methodology, data curation, and drafting of the original manuscript. Fatimah Zahara contributed to validation, formal analysis, and critical review and editing. Vira Nur Fadillah Lubis carried out the investigation and provided resources. Fatimah Zahara assisted with data analysis and manuscript revision. Vira Nur Fadillah Lubis contributed to supervision and final manuscript refinement. All authors have read and approved the final version of this article.

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Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request. No publicly archived datasets were used or generated during this research.

Declaration of Interests Statement

The authors declare that they have no known financial or personal conflicts of interest that could have influenced the work reported in this paper.

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