

A Study on the Impact of E-Commerce Politeness on the Service Quality of Food Delivery platforms

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DOI: 10.46609/IJSSER.2025.v10i07.009 URL: <https://doi.org/10.46609/IJSSER.2025.v10i07.009>

Received: 16 June 2025 / Accepted: 10 July 2025 / Published: 23 July 2025

ABSTRACT

With the rise of the Internet, food delivery platforms have experienced rapid growth, drawing attention to the quality of service provided to consumers. This study examines consumer experiences on food delivery platforms from the perspective of e-commerce politeness and provides effective recommendations for enhancing service quality. By employing the Critical Incident Technique (CIT), the study identifies key service quality issues that consumers encounter—including problems related to interface design, food delivery platform regulation, pricing discount mechanisms, precise delivery, humanistic care, and after-sales service. Based on these findings, recommendations are offered to help create a better market environment and enhance the service quality experience for consumers.

Keywords: Critical Incident Technique, E-commerce politeness, Food delivery platform, Service quality

1. Introduction

As an internet-based digital service system, food delivery platforms connect consumers with food delivery merchants, primarily providing services for online ordering, payment, and door-to-door delivery. These food delivery platforms operate with core functions and business models centered on merchant registration, customer ordering, order processing and delivery, and payment and settlement. This model offers both merchants and consumers greater choice and convenience, making it an integral part of daily life. As a type of e-commerce food delivery platform, food delivery platforms are uniformly referred to as "food delivery platform"

throughout this study.

With the rise of a fast-paced lifestyle, the food delivery platform—characterized by “speed” and “convenience”—has gradually become an integral part of daily life. These food delivery platforms have grown rapidly, serving a massive and continuously expanding consumer base. In such a vast market, food delivery platforms constantly optimize and evolve, adopting various methods to attract consumers. Today, mere convenience and fast service do not suffice; during daily interactions with these food delivery platforms, consumers often face issues of “politeness.” Inhuman-computer interactions, the perceived e-commerce politeness significantly influences consumers’ willingness to use the food delivery platform and is key to enhancing user loyalty.

Although many food delivery platforms have implemented measures regarding e-commerce politeness, problems still persist. Existing research primarily focuses on business models and food delivery platform management, with few studies investigating politeness. Therefore, this study utilizes the Critical Incident Technique (CIT) to explore consumers’ service quality experiences on food delivery platforms from the perspective of e-commerce politeness. The research systematically analyzes the deficiencies regarding politeness and offers constructive suggestions to improve consumer satisfaction and loyalty—ultimately creating a pleasant consumption environment and enhancing service quality.

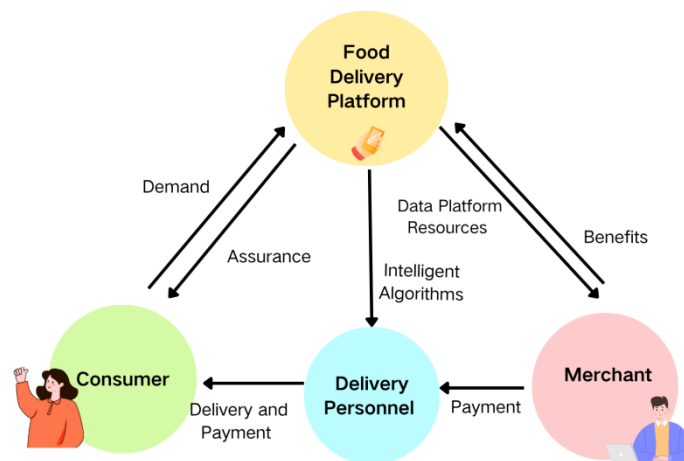
2. Literature Review

2.1 Development and Current Status of Food Delivery Platforms

Food delivery refers to a service model in which meals are prepared in a restaurant and delivered by a courier to a location specified by the consumer. This process typically involves consumers placing orders online, restaurants preparing meals, and couriers delivering the food within a specified time so that consumers can enjoy meals away from home. Prior to 2008, food delivery platforms were not widely popular; only households with higher incomes and better education levels regularly ordered food delivery, and residents in developed regions had more regular ordering patterns (Turrell & Giskes, 2008). With the advent of computers, smartphones, the Internet, and mobile applications, ordering food delivery has become much easier, leading more consumers to order meals online and await delivery—making food delivery increasingly popular (da Cunha et al., 2024). The digital era has deepened the interconnections among consumers, merchants, and food delivery platforms, fueling the rapid rise of food delivery platforms. In 2020, despite COVID-19 causing significant losses in the food industry, it unexpectedly spurred the development of the food delivery sector by meeting the needs of those staying at home (Tsai et al., 2022). Even post-pandemic, consumer enthusiasm for food delivery remains high.

Consumers now pay close attention to factors such as packaging, delivery, and more, which strongly influence satisfaction (Shi, 2023). Additionally, issues like food delivery platform regulation, information asymmetry, interface design, and real-time transparent delivery processes further affect consumer service quality experiences (Chen et al., 2020; Li et al., 2023). In summary, as food delivery platforms continue to develop and attract more consumers, the diversity of consumer needs becomes increasingly apparent. To sustain growth and continue attracting consumers, these food delivery platforms must consistently enhance their services.

Fig. 1. The ecosystem of food delivery platform



The food delivery ecosystem is primarily composed of four key entities: consumers, food delivery platform, merchants, and delivery riders. In this ecosystem, consumers place orders for food delivery services, and the food delivery platform receives these requests—providing merchants with food delivery platform resources and transaction orders and offering riders intelligent algorithms along with delivery orders. Once merchants complete the transaction orders, delivery riders deliver the food directly to consumers, while the food delivery platform supplies after-sales service to safeguard consumer rights, creating a continuously repeating cycle of transactions.

2.2 The Development of E-Commerce Politeness

E-commerce politeness refers to the positive experience that consumers perceive during human-computer interactions. In this study, it is defined as the process whereby consumers, while using food delivery platforms, feel satisfied, happy, respected, or gain a positive impression. In 1960, Licklider introduced the concept of man-computer symbiosis, proposing that humans and computers could work as partners—a foundational idea for Human-Computer Interaction (HCI)

(Licklider, 1960). Although HCI originated in computer science, it exhibits significant interdisciplinary characteristics by integrating technological frameworks with social science research paradigms (Beaudouin-Lafon, 1993).

Early human-computer interaction research extended beyond technical issues to embrace user-centered design principles that enhance user experience (Kadaskar, 2024). This focus on user experience has attracted considerable attention from designers, influencing later HCI studies. Researchers are now promoting collaborative and caring practices in HCI to steer it toward a more humanized future (Sharma et al., 2023).

Both man-computer symbiosis and interface design emphasize prioritizing a positive user experience and care. In these interactions, politeness is considered key. Impolite food delivery platforms tend to leave negative impressions and increase user churn; conversely, polite food delivery platforms foster positive experiences and improved user loyalty. Whitworth even asserts that politeness is a hallmark of next-generation community software. However, due to insufficient attention during design, impolite incidents remain common, adversely affecting user experience (Whitworth, 2009). In commercial contexts, politeness is also a significant factor in achieving business success (Chen & Hu, 2017). Consumers are concerned with whether their rights are respected and if they receive useful information—a focus that motivates merchants to allocate resources more effectively. Hence, studying the impact of politeness on consumer satisfaction can improve business management efficiency (Chen & Hu, 2015).

Consequently, this study expands the concept of politeness to “e-commerce politeness” in the realm of food delivery platforms, emphasizing human perceptions during interactions. The objective is to explore service quality experiences from the consumers’ perspective and to offer managerial recommendations that improve food delivery platform quality and boost consumer satisfaction.

3. Research Methods

3.1 Critical Incident Technique

The Critical Incident Technique (CIT) was proposed by Flanagan in 1954 and first applied in psychological research (Flanagan, 1954). Its core idea is to collect and analyze significant incidents under specific circumstances to reveal the critical factors behind decisions and behaviors. Initially used to assess military training performance, CIT’s flexibility and operability quickly made it a widely used interdisciplinary qualitative research method. It has been applied in various fields—for example, in designing medical training curricula (Hayes et al., 1979), optimizing service quality in the service industry (Zhang et al., 2010), and in student affairs research and practice (Vianden, 2012). In 2021, CIT was also applied in health and physical

education to explore approaches to social justice issues (Philpot et al., 2021). Today, CIT is a mature and widely adopted method.

In this study, CIT is utilized to collect critical incidents in human-computer interactions to accurately identify the behaviors that lead to consumers perceiving impoliteness. By focusing on actual incidents and emphasizing consumers' subjective experiences, CIT helps reveal common service quality issues and informs remedial strategies—thereby filling existing research gaps. This study adopts CIT from the perspective of e-commerce politeness to examine consumer service quality experiences on food delivery platforms.

3.2 Research Design

This study employs random sampling to select survey participants from offline settings, while also utilizing multiple channels (online social media and offline questionnaires) to collect data. From March 1, 2025, to April 29, 2025, the study collected information on consumers' most satisfying and most dissatisfying incidents when using food delivery platforms (e.g., Meituan, Ele.me) in China. The research seeks to identify the key factors influencing service quality from the perspective of the consumer. In addition, the questionnaire included an item asking, "For unsatisfactory incidents on the food delivery platform, what resolution would satisfy you? If resolved properly, would you continue to use the food delivery platform or purchase the merchant's food?" This question aims to understand consumers' subsequent perceptions regarding unsatisfactory events.

4. Data Analysis

4.1 Basic Information

Based on the survey data, a total of 212 questionnaires were collected. After excluding invalid responses (due to illogical answers, off-topic responses, etc.), there were 134 valid responses regarding satisfying incidents, with an effective response rate of 63%; and 125 valid responses regarding unsatisfying incidents, with an effective response rate of 59%. Regarding the age distribution of respondents, those under 15 years accounted for 0.62%, ages 15–20 accounted for 61.73%, ages 21–30 accounted for 31.48%, ages 31–40 for 3.70%, ages 41–50 for 1.85%, and those over 50 for 0.62%. The participant group is mainly composed of young people, among whom 85.19% are students. Furthermore, among the surveyed users, 8.64% reported using food delivery platforms daily, and as many as 51.85% reported using them at least twice a week. These data provide robust support for research into consumer experience.

4.2 Categorization Principles

The study processed and analyzed all valid questionnaires, classifying the satisfactory and unsatisfactory incidents into six categories and outlining the classification criteria. The categorization and descriptions for the satisfactory incidents are shown in Table 1, while those for the unsatisfactory incidents are shown in Table 2.

Table 1. Categories of satisfying incidents

Category Name	Description
Interface Design	The visual and functional impression when logging in, opening, using the food delivery platform, and browsing products.
Pricing Discount Mechanism	The pricing (including the product, packaging, and delivery fees) is appropriate, and the discount mechanisms are transparent and easy to use.
Precise Delivery	The courier delivers the product accurately and completely on time, with the delivery process being transparent in real time.
Humanistic Care	The emotional care and polite interaction provided by merchants, couriers, and the food delivery platform beyond routine actions.
After-sales Service	Responsive after-sales services, including timely resolution of late orders and appropriate compensation.
Privacy Protection	The safeguarding of consumers' personal information from disclosure or misuse.

Table 2. Categories for unsatisfactory events

Category Name	Description
Interface Design	The overall impression of the interface when logging in, opening, using the food delivery platform, and browsing products, when it does not meet expectations.
Pricing Discount Mechanism	Issues with pricing (including product, packaging, and delivery fees) and with the convenience of using discount mechanisms.
Precise Delivery	Failures in achieving timely and accurate delivery of products, including a lack of transparent delivery processes.
Humanistic Care	A deficit in the friendly and polite emotional care provided by the merchant, courier, or food delivery platform.
After-sales Service	The ineffective resolution or handling of consumer complaints through after-sales services.
Quality Supervision	Inadequate management and monitoring of merchant and product quality by the food delivery platform.

4.3 Reliability Testing

The reliability analysis of the classification of critical incident techniques is primarily divided into two core dimensions: individual classification consistency and inter-rater consistency. This analysis ensures that different researchers or raters classify events consistently, thereby reducing subjective biases, enhancing research accuracy, and providing robust support for the study's conclusions.

Individual classification consistency refers to an individual's ability to maintain continuity and stability in logic, criteria, and attitude during the classification process, resulting in consistent outcomes over time. Maintaining such consistency helps reduce cognitive conflicts and

uncertainty. It is generally accepted that when the level of agreement among two or more raters exceeds 0.8, the raters demonstrate satisfactory consistency. In this study, three raters were involved: an expert scholar in the field of online food delivery e-commerce, a corporate consultant for an online food delivery platform, and a long-term user of such a food delivery platform. After the classification process was completed, an individual classification consistency evaluation was conducted for each rater. As demonstrated by the results in Tables 3 and 4, the individual classification consistency for all three raters exceeded 0.9, thereby confirming their reliability in classification (Flanagan, 1954).

Table 3. Raters’ individual classification consistency – satisfaction events

Rater	Number of Consistent Classifications	Individual Consistency
Rater 1	127	0.95
Rater 2	131	0.98
Rater 3	127	0.95

Table 4. Raters’ individual classification consistency – unsatisfactory events

Rater	Number of Consistent Classifications	Individual Consistency
Rater 1	120	0.96
Rater 2	121	0.97
Rater 3	117	0.94

Inter-rater consistency refers to the stability and reliability of the assessments made by different raters when classifying the same data set. This consistency is important for ensuring data quality. In this study, the classification was performed twice with an interval of two weeks between sessions. The comparison of the results from the two sessions is provided in Tables 5 and 6 below.

Table 5. Inter-rater consistency numbers – satisfaction events

	Rater 1	Rater 2	Rater 3
Rater 1	127	—	—
Rater 2	117	131	—
Rater 3	106	117	127

Table 6. Inter-rater consistency numbers – unsatisfactory events

	Rater 1	Rater 2	Rater 3
Rater 1	120	—	—
Rater 2	101	121	—
Rater 3	101	107	117

Based on the inter-rater consistency tables in Table 5 and Table 6, R (reliability) is calculated using the following formulas, respectively:

$$R = \frac{(N \times A)}{1 + [(N - 1) \times A]}$$

$$A = \frac{\frac{2M_{12}}{n_1 + n_2} + \frac{2M_{23}}{n_2 + n_3} + \frac{2M_{13}}{n_1 + n_3}}{N}$$

Where:

R = Reliability

N = Number of raters

A = Average inter-rater agreement

M = Number of instances where raters agree on the classification

n = Number of samples judged by each rater

Based on the formula calculations, the following results were obtained, as shown in Table 7.

Table 7. Classification reliability table

Category	Average Inter-Rater Agreement (A)	Reliability (R)
Satisfaction	0.85	0.94
Dissatisfaction	0.82	0.93

In this study, both the satisfaction and unsatisfactory events demonstrate an average inter-rater agreement exceeding 0.8, indicating good data stability and consistency. With a reliability exceeding 0.9, the study meets the necessary reliability criteria (Flanagan, 1954).

4.4 Validity Analysis

Validity is the key factor when choosing or applying an instrument; it indicates the extent to which the instrument measures what it is supposed to measure. Content validity, one of the common types, is determined through a two-stage process (development and judgment) to ensure that the instrument’s items adequately cover the content domain (Lynn, 1986). Expert validity, a core component of content validity, is typically assessed by subject-area experts to ensure the scientific rigor and applicability of the measurement tool (Davis, 1992). Face validity refers to the extent to which laypeople perceive the procedure or tool as reasonable and relevant (Lynn, 1986). In this study, both expert validity and face validity were analyzed to ensure that the data are stable, reliable, and supportive of the study’s conclusions.

4.5 Classification Results

Based on the classification, corresponding typical key event examples were extracted from both satisfactory and unsatisfactory incidents, and the categorized data was preliminarily analyzed to understand consumer feedback across different categories. Examples of key events are shown in Tables 8 and Table 9.

Table 8. Examples of key satisfying incidents

Category Name	Key Incident Example
Interface Design	"Previously, I often couldn’t find the product I wanted. Later, with intelligent recommendations, as soon as I opened the interface, I was automatically shown products matching my tastes, which helped me quickly choose what I wanted."
Pricing Discount Mechanism	"Meituan often issues discount coupons for full reduction orders, making ordering more affordable."

Precise Delivery	"Meituan’s delivery is very punctual – even during heavy rain, my food was delivered on time and without any spillage."
Humanistic Care	"During the Dragon Boat Festival, a merchant included a small card reading 'Happy Dragon Boat Festival' along with a small gift, which made me feel very warm."
After-sales Service	"When I had an after-sales issue and couldn’t reach an agreement with the merchant, Meituan intervened promptly and resolved the problem quickly."
Privacy Protection	"Every time I order, my phone number and name are hidden, ensuring that my privacy is well protected."

Table 9. Examples of key unsatisfying incidents

Category Name	Key Incident Example
Interface Design	"Once I wanted a refund but couldn’t find the appropriate option, which resulted in the refund failing."
Pricing Discount Mechanism	"It feels like the food delivery platform penalizes frequent users— ordering repeatedly from the same store did not change the dine-in price, yet the delivery price increased."
Precise Delivery	"One evening after work, I waited a very long time for my order; the delivery was significantly delayed, leaving me extremely hungry and frustrated."
Humanistic Care	"After missing a call, I arrived late to pick up my order, and the courier’s attitude became aggressive with personal insults."
After-sales Service	"When I sought after-sales support, the food delivery platform’s customer service repeated responses mechanically and failed to resolve the issue."
Quality Supervision	"I once received food with an odd smell; the experience was very poor. I hope the merchant pays more attention to food quality."

Based on the summarized data, the average values for satisfactory and unsatisfactory events were ranked in descending order. The rankings for the average values of satisfactory and

unsatisfactory events are shown in Table 10 and Table 11.

Table 10. Average ranking of satisfying incidents

No	Category Name	Rater 1	Rater 2	Rater 3	Average
1	Humanistic Care	29	37	39	35
2	Pricing Discount Mechanism	26	28	26	26.67
3	After-sales Service	25	26	23	24.67
4	Precise Delivery	27	21	22	23.33
5	Interface Design	15	10	12	12.33
6	Privacy Protection	12	12	12	12

Table 11. Average ranking of unsatisfying incidents

No.	Category Name	Rater 1	Rater 2	Rater 3	Average
1	Precise Delivery	41	43	38	40.67
2	After-sales Service	31	23	17	23.67
3	Pricing Discount Mechanism	15	24	24	21
4	Humanistic Care	19	16	25	20
5	Quality Supervision	12	10	13	11.67
6	Interface Design	6	6	7	6.33

The results indicate that among the 187 satisfying incidents, humanistic care had the highest average (35 cases), suggesting that users are most satisfied with the human touch provided by

food delivery platforms; followed by after-sales service, with an average of 24.67 cases. Among the 125 unsatisfying incidents, precise delivery was the most frequent issue (with an average of 40.67 cases). Other issues include after-sales service (average 23.67 cases), pricing discount mechanisms (average 21.00 cases), and humanistic care (average 20.00 cases). In summary, while consumers' service experiences on food delivery platforms are mainly affected by after-sales service, pricing discount mechanisms, precise delivery, and humanistic care, issues concerning quality supervision and interface design, although less frequent, should not be overlooked. Based on these findings, the study proposes recommendations in six key areas to offer pragmatic references for food delivery platforms, merchants, and consumers, thereby fostering a healthy development of the food delivery industry.

5. Conclusions and Recommendations

5.1 Conclusions

Optimizing the food delivery market and enhancing consumer experience is a long-term process that requires the joint responsibility of food delivery platforms, merchants, and consumers to achieve a win-win ecosystem. The results of this study show that some consumers are satisfied with the food delivery platform's ability to protect personal privacy, offer an effective pricing discount mechanism and a well-designed interface, achieve precise delivery, and provide humanistic care along with efficient after-sales service. Conversely, other consumers are dissatisfied with aspects such as unreasonable interface design, inaccurate delivery, weak quality supervision, problematic pricing discount mechanisms, a lack of humanistic care, and poor after-sales service. Therefore, improvements are needed in seven areas: after-sales service, pricing mechanism, precise delivery, humanistic care, product quality, interface design, and privacy protection. Consumers should also be encouraged to defend their legitimate rights and express their opinions. In this way, food delivery platforms, merchants, and consumers can collaboratively build and maintain a healthy food delivery market ecosystem.

In conclusion, e-commerce politeness continues to affect consumers' service experiences. This study concludes that efforts should focus on optimizing interface design, strengthening supervision, improving after-sales service, refining pricing mechanisms, increasing the transparency and accuracy of delivery, and enhancing humanistic care. Based on these findings, the following recommendations are made for food delivery platforms, merchants, and consumers.

5.2 Recommendations

5.2.1 Recommendations for Food Delivery Platforms

5.2.1.1 Enhance After-sales Service Capability and Problem Resolution Efficiency

After-sales service occupies a critical role in both satisfying and unsatisfying incidents. As the core mechanism for service recovery, its responsiveness directly affects consumer trust and satisfaction.

Food delivery platforms should establish comprehensive after-sales policies with clear compensation standards to ensure a basis for handling issues. As the first point of contact for consumer complaints, merchants require effective communication and resolution skills. Food delivery platforms should clarify merchants' responsibilities, provide thorough after-sales training, and enhance their communication and problem-solving abilities.

Food delivery platforms should also leverage artificial intelligence to improve the performance of AI-driven customer service, while ensuring a 24-hour live support system for cases that require human intervention.

Finally, design a dedicated user interface option for consumers to request direct intervention from food delivery platform when necessary, in order to avoid inefficient issue handling.

5.2.1.2 Design a Transparent and User-Friendly Pricing Mechanism

Pricing greatly influences consumers' choice of food delivery platform. Food delivery platforms often employ discount coupons and delivery fee reductions to attract consumers. However, unsatisfying incidents have revealed major issues such as overly restrictive coupon conditions, unclear pricing for packaging and delivery fees, and cases of differential pricing for the same product among different consumers.

To address these issues, food delivery platforms should design a transparent and standardized pricing system. Discount schemes should be easily accessible without unreasonable thresholds. Pricing logic should be publicly disclosed, with caps set for additional fees to prevent inflated charges. The food delivery platform should also offer side-by-side price comparisons for similar products and track price changes over time to work with merchants and consumers against price discrimination.

5.2.1.3 Improve the Accuracy of Delivery

Convenience and timeliness are the key value propositions of food delivery services and are critical to consumer satisfaction. Survey results indicate that imprecise delivery is the most critical unsatisfying issue. Food delivery platforms should improve precise delivery from three dimensions: Increase courier efficiency by leveraging big data and AI to intelligently assign orders based on distance and to optimize delivery routes. Enhance the accuracy of the

positioning system by upgrading navigational tools for couriers and providing real-time location and status updates to consumers. Establish contingency plans for unforeseen events (e.g., severe weather), including designing time buffers and improved compensation mechanisms for delayed or missed orders.

5.2.2 Recommendations for Merchants

5.2.2.1 Strengthen Humanistic Care

In the survey of satisfying incidents, humanistic care received the highest recognition from consumers, significantly exceeding other aspects. This demonstrates that emotional and personalized service has a profound impact on the consumer experience.

Merchants should enhance humanistic care both verbally and behaviorally. Verbally, use polite and friendly language when interacting with consumers (e.g., adding warm greetings such as “Have a wonderful day” on orders or including caring messages for special orders).

Behaviorally, consider offering specialized combo packages for specific groups (for example, “warm care meal packages” for women during menstruation, “late-night care packages” for those working overtime, or birthday packages). During special occasions, limited-edition packages with festive greetings and small gifts can further foster emotional connections.

5.2.2.2 Reinforce Product Quality Supervision

Food safety is the foundation of consumer rights protection. Serving substandard or spoiled food can severely damage the consumer experience.

Merchants should strengthen quality supervision by rigorously screening raw materials and promptly removing expired or spoiled items. Enhance hygiene and food safety training for employees, and enforce strict monitoring of production processes.

Establish a robust quality control system with standardized operating procedures. Merchants should proactively provide relevant business and health permits along with visual evidence (e.g., photos or videos) of their operational environment. Such measures can strengthen consumer trust and ensure a high-quality service experience.

5.2.2.3 Optimize the Interface Layout for Product Selection

The design of the product selection interface directly affects the consumer experience. Merchants should reconfigure this interface so that product selection is intuitive and clear.

Clearly label delivery fees, service fees, etc., to avoid inconsistencies between the product

selection and payment pages. Display both the actual price and any additional fees transparently on product pages.

In product descriptions, aside from detailing taste and features, include nutritional information (e.g., calorie count, sugar content, nutritional ingredients) and clearly flag potential allergens (such as seafood or nuts) as well as stimulants (like caffeine) to address health concerns.

5.2.3 Recommendations for Consumers

5.2.3.1 Protect Your Privacy

When using food delivery platforms, exercise caution in providing personal information. Avoid disclosing unnecessary details (such as contact numbers or addresses) to merchants or couriers.

Disable or refrain from enabling unnecessary permissions (such as photo album access) on the food delivery platform, and avoid casually exposing personal details such as social media accounts, home addresses, or phone numbers.

5.2.3.2 Vigorously Defend Your Legitimate Rights

Familiarize yourself with relevant laws and be aware of your rights as a consumer. When your rights are violated, assert them firmly.

During transactions, double-check orders and products; if any discrepancies arise, document them with photos or screenshots.

When asserting your rights, communicate rationally through proper channels. If neither the merchant nor the food delivery platform responds appropriately, consider using third-party consumer complaint channels to safeguard your rights.

5.2.3.3 Offer Constructive Feedback

Provide positive feedback for satisfying experiences and constructively critique unsatisfying ones. Avoid overly aggressive or defamatory language; instead, express your opinions clearly and logically so that the collective consumer voice can help improve the overall market environment.

Acknowledgments

This research was funded by the Guangdong Science and Technology Program (China) under Grant No. 2024A0505050036 and by grants from the Department of Education of Guangdong Province under Grant Nos. 2021WTSCX093 and 2020GXJK168. We gratefully acknowledge

their financial support and encouragement.

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