

Food Delivery Business on Digital Platforms and Public Interest and Consumer Protection in Thailand

Keovalin Torpanyacharn¹

Sukhothai Thammathirat Open University, 9/9 Moo 9, Bangphut Sub District, Pakkret, Nonthaburi, 11120

E-mail: keovalin.t@gmail.com

Walaiwan Mathurotpreechakun²

Sukhothai Thammathirat Open University, 9/9 Moo 9, Bangphut Sub District, Pakkret, Nonthaburi, 11120

E-mail: walaiwan16169@gmail.com

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Abstract

This research aims to study concepts, theories, and regulations of food delivery business on digital platforms. It includes the comparative study of international regulations under World Health Organization (WHO), foreign laws, namely, the United States of America, Australia and People's Republic of China related to legal measures on consumer protection on food delivery businesses. The study also analyzes the limitations and legal problems under Thai laws and propose the legal measures more clearly about rights, duties, responsibilities and sanction for the relevant parties of the food delivery businesses on digital platforms to protect the public safety and consumer rights in Thailand. The study employs a qualitative method with in-depth interview and group discussion. The research finds that the selected foreign laws provide that food providers and restaurants are responsible for public safety and must ensure food hygiene and safety. However, Thai laws lack such legal measures. Therefore, Thai laws and regulations on public safety and consumer protection on food delivery businesses on digital platforms should be amended. Moreover, the system management of the service providers, rights, duties, responsibilities and sanction of the relevant parties should be obviously imposed as well.

Keywords: Digital Platform, Food Delivery Business, Consumer Protection, Food Hygiene and Safety

¹ Assistant Professor, Lecturer at School of Law, Sukhothai Thammathirat Open University.

² Lecturer at School of Law, Sukhothai Thammathirat Open University,



1. Introduction

Online media has been utilized by those conducting food businesses to attract and reach the consumers broadly. Technology has been used to manage and handle the store as well as digital platform service providers in food delivery business such as Foodpanda, Lineman, Grab Food, Shopee Food, and Robinhood have been approaching. A digital platform service provider performs its duty as a middleman, gathering various restaurants in one place and provides service of food delivery to their consumers or customers via new technology such as application, efficiently providing convenience to consumers. This results in continuous growth of food delivery service during the last five years in the average rate of 7.7 percent per year. Its value increases from 23,640 million baht in 2014 to 31,814 million baht in 2018. Market trend in 2022 expects such increase to continue due to service providers' consistent advertisement and sales promotion as well as their expansion of restaurants and customers base on other provinces. Moreover, the increase of consumers' familiarity with food ordering via digital platform suggests that index amount of food orders from the consumers will rise 2.9 percent³.

Another dimension which comes with the growth of food business on digital platforms is public safety in using traffic and vehicles as well as consumer protection to ensure that the food they receive is clean and safe. As a consequence, safety of land transport and protection of consumer who uses restaurants service on digital platforms became essential considerations, corresponding to Twenty Years Strategy of Consumer Protection (2017 - 2036) that encourages consumer protection to keep up with globalization, scientific advancement and technology that supports innovation of modern products and service in information technology, communication, biotechnology, nanotechnology and E-commerce. In addition, there are still issues with preserving food quality by cold chain storage. However, the data from the interviews revealed that food transport from digital platforms is a small form of transport, which differs from the US

³ Kasikorn Research Center, "Food Delivery Year 2022 Continuously Expanding: Application Service Providers Advance into Other Provinces to Broaden Their Customers Base," accessed May 12, 2022, <https://www.kasikornresearch.com/th/analysis/k-econ/business/Pages/Food-Delivery-z3289.aspx>.

approach which is interstate and bulk food transportation.

Laws as a tool of the state are therefore to be utilized to regulate public safety, food hygiene and safety of food delivery on digital platforms. However, limitations of laws in regulating public safety, food hygiene and safety of food delivery on digital platform are found since they lack important measures concerning public safety, food hygiene and safety namely, system management, responsibilities of platform service providers, qualifications and duties of restaurants, qualifications and duties of a food transports, as well as sanctions. On the other hand, such regulations are costs for business entrepreneurs, digital platform service providers and restaurants, as well as food transport. With this situation of growing digital platform service, the issue of government's role has arisen.⁴

2. Literature review

The growth of food delivery on digital platforms tends to continuously expand both in Thailand and other countries, contributing to economic development and increase of income for restaurants and transporters and at the same time providing convenience to consumers. When analyzing the concepts of technology acceptance⁵ and consumers' reliance⁶, which keeps increasing, together with the concept of mobile application⁷ that digital platform service providers can increase communication channels directly to consumers as well as other marketing mix such as price, convenience and communication that allows consumers to make decision more easily⁸, all these promote consumers' use of food delivery on digital platforms.

⁴ This research article is a part of research program on Enhancement of Efficiency in Regulating Restaurants on Digital Platforms to Protect Consumers in the Age of Super-Smart Technologies. The research is funded by Thailand Science Research and Innovation (TSRI) in fiscal year 2022.

⁵ Roger Shoemaker, *Communication of Innovations: A Cross-Cultural Approach* (New York: The Free, 1978).

⁶ Willem H. Baiter, Richard Lago, and Nicolas Stern, "Promoting an Effective Market Economy in a Changing World," accessed May 12, 2021, <http://eprints.lse.ac.uk/3740/>.

⁷ Suchada Plachaipromsilp, "Usages Trend of Mobile Application," *Journal of Executive* 31, no. 4 (2011): 110-115.

⁸ Pramote Yotkaew, "Digital Marketing and Lifestyle Changes in Thai Society " *Journal of Multidisciplinary Academic Research and Development* 3, no. 1 (2021): 18-19.



When considering the role of government and regulation of food delivery business on digital platforms, public interest and appropriate intervention policy must be taken into account because, on one hand, digital platforms can also benefit the public. Therefore, suitable reasons for intervention by the state must be market failure or to protect other interests of public. By studying problem of facts together with information from sample groups, it is found that there are two dimensions that the government should intervene namely, dimension of public safety in using traffic and vehicles and dimension of food hygiene and safety.

3. Methods

The study employs a qualitative method with documentary research of concepts and theories about regulations of business on digital platforms, limitations of Thai laws concerning food delivery business on digital platforms and public safety in using traffic and vehicles, food hygiene and safety. Moreover, the study encompasses guidelines on food delivery of World Health Organization (WHO) and legal measures on public safety and consumer protection regarding food delivery of the United States of America (USA), Australia and People's Republic of China. The study does not only include measures for food business, but also includes suitable measures for relevant parties which are digital platforms, service providers and transporters. This research is further conducted by depth-interviews with 10 people divided into 3 groups of stakeholders namely, a group representing state, a group representing businesses and private sectors related to food delivery businesses on digital platforms and a group representing consumers. This research also consists of group discussions with 15 relevant stakeholders divided into 4 groups namely, a group representing state, a group representing of business and private sectors relating to food delivery businesses on digital platforms, a group representing consumers and a group representing the academics. The Analysis is then conducted and leads to proposal of legal measures on food delivery business on digital platforms in the dimension of public safety, food hygiene and safety.

4. Result and discussion

Main findings of this research are as follows:

4.1 Limitations of laws on public safety, food hygiene and safety in food delivery on digital platforms

4.1.1 Public safety

Concerning public safety in providing service on digital platforms, at present, Announcement of Department of Land Transport Re: Practice Guideline for Package and Food Delivery Business via *Motorcycle* has been enacted to regulate food delivery business on digital platforms in the dimension of public safety on using traffic and vehicles. Nonetheless, such Announcement still lacks legal sanctions and important details, namely management of digital platform systems, responsibilities of transporters in regards to provision of materials and tools used for delivery, rights and duties of restaurants concerning public safety, employment conditions in case of transporters with previous criminal record⁹, regular training of transporters on public safety, suspension of transporters as well as penalty when failing to comply with practice guidelines.

4.1.2 Food hygiene and safety

Under the Food Act, B.E. 2522, the “digital platform provider”, by definition, is not formally included or under control as a manufacturer or importer for sale, or sell impure, counterfeit, substandard or other food. Moreover, the digital platform provider is not formally under the definition of “business operator” under announcement of the Ministry of Public Health of Thai Law since it is not a person or a juristic person who has received a license or a certificate of notification of the establishment of a food selling place.

So, laws do not contain any provision on the rights and duties of digital platform service providers regarding food hygiene and safety, qualifications and duties of restaurants that are permitted to provide delivery service via digital platforms,

⁹ Kladcharoen Wachiraporn, “Legal Problems Regarding the Business of Food Delivery Service Application,” accessed May 12, 2022, http://www.lawgrad.ru.ac.th/AbstractsFile/6124011316/161406304643cef74819f8de2acc8385fa177a2217_abstract.pdf.



qualifications, and duties of transporters as a part of food process, or legal sanction. Thus, practical measures for consumer protection are not adequate.

4.2 Comparative study of laws from selected countries concerning regulations of digital platforms business

According to the comparative study of selected countries especially, the USA, Australia and People's Republic of China, the legal measures of each country can be summarized as follows: (Table 1-3)

A study of three US laws and regulations, namely Sanitary Transportation, FDA Guidelines for Food Protection from Contamination for New Business Models of Human and Animal Food, and The Law of California: AB3336 Third-Party Food Delivery Platforms (Food Safety), found the following data:

Sanitary Transportation of Human and Animal Food is the transportation of food that requires temperature control. The responsible person is the person who is involved in moving all parts of the process. It is the person who is responsible for ensuring that the product is not contaminated. And there are other responsibilities required by law, such as documentation duties, and training. This law shows the responsibility of all food handlers. Even if the person is not part of the production or cooking process, which is comparable to a food carrier from a digital platform.

FDA Guidelines for Food Protection from Contamination for New Business Models impose duties on digital platform providers. And technology is used for quality control and inspection. By studying FDA guidelines, This guideline shows the responsibility of intermediaries in food delivery businesses.

The Law of California: AB3336 Third-Party Food Delivery Platforms (Food Safety) This law establishes the responsibility and indemnification of digital platform providers. If there is damage to the consumer The shipper is responsible for maintaining cleanliness while the cargo is in its control. This law shows the responsibility of those involved in the food transportation process.

Table 1 Summary of the USA's legal measures on consumer protection regarding food delivery on digital platforms

Laws	Sanitary Transportation of Human and Animal Food¹⁰	FDA Guidelines for Food Protection from Contamination for New Business Models¹¹	The Law of California: AB3336 Third-Party Food Delivery Platforms (Food Safety)¹²
Parties falling under Regulations	Shippers, loaders, carriers by motor vehicle and rail vehicle, and receivers	Digital platform service providers	Third-party food delivery platforms mean a business engaged in the service of online food ordering and delivery from a food facility to a consumer.
Rights and Duties of Digital Platform Service Providers		Compliance with relevant laws and regulations	Duties of digital platform service providers: Officer can give a penalty to digital platform service providers for violating the regulations in the form of compensation.

¹⁰ U.S. Food & Drug Administration, "Fsm Final Rule on Sanitary Transportation of Human and Animal Food," last modified September 12, 2018, accessed May 12, 2022, <https://www.fda.gov/food/food-safety-modernization-act-fsma/fsma-final-rule-sanitary-transportation-human-and-animal-food>.

¹¹ U.S. Food & Drug Administration, "New Era of Smarter Food Safety," accessed May 12, 2022, <https://www.fda.gov/media/139868/download>.

¹² Wendy Carrillo, "Third-Party Food Delivery Platforms: Food Safety," Carrillo, Wendy, last modified September 18, 2020, accessed May 12, 2022, <https://openstates.org/ca/bills/20192020/AB3336/>.



Table 1 (Cont.)

Laws	Sanitary Transportation of Human and Animal Food ¹³	FDA Guidelines for Food Protection from Contamination for New Business Models ¹⁴	The Law of California: AB3336 Third-Party Food Delivery Platforms (Food Safety) ¹⁵
Supportive Delivery Environment	Shippers are to establish written procedures concerning i.e., vehicles and transportation equipment, temperature conditions etc.		
Definition of Food Transporters	Loaders mean a person who physically loads food onto a motor or rail vehicle. Loaders must ensure that transportation equipment is in an appropriate sanitary condition. Before loading food that requires temperature control,		

¹³ U.S. Food & Drug Administration, “Fsmas Final Rule on Sanitary Transportation of Human and Animal Food,” last modified September 12, 2018, accessed May 12, 2022, <https://www.fda.gov/food/food-safety-modernization-act-fsma/fsma-final-rule-sanitary-transportation-human-and-animal-food>.

¹⁴ U.S. Food & Drug Administration, “New Era of Smarter Food Safety,” accessed May 12, 2022, <https://www.fda.gov/media/139868/download>.

¹⁵ Wendy Carrillo, “Third-Party Food Delivery Platforms: Food Safety,” Carrillo, Wendy, last modified September 18, 2020, accessed May 12, 2022, <https://openstates.org/ca/bills/20192020/AB3336/>.

Table 1 (Cont.)

Laws	Sanitary Transportation of Human and Animal Food ¹⁶	FDA Guidelines for Food Protection from Contamination for New Business Models ¹⁷	The Law of California: AB3336 Third-Party Food Delivery Platforms (Food Safety) ¹⁸
	loaders must ensure that cold storage compartment is adequately prepared for refrigerated transportation.		
Qualifications of Transporters Rights and Duties of Transporter	Rights of Transporters: If a person or company under this regulation at any point in the transportation process becomes aware of a possible failure of temperature control, such food must not be distributed until a determination of safety is made.		Duties of Transporters: Ready-to-eat food delivered through a third-party digital platform service providers shall be transported in a manner that meets all the following requirements: ¹⁹

¹⁶ U.S. Food & Drug Administration, "Fsma Final Rule on Sanitary Transportation of Human and Animal Food," last modified September 12, 2018, accessed May 12, 2022, <https://www.fda.gov/food/food-safety-modernization-act-fsma/fsma-final-rule-sanitary-transportation-human-and-animal-food>.

¹⁷ U.S. Food & Drug Administration, "New Era of Smarter Food Safety," accessed May 12, 2022, <https://www.fda.gov/media/139868/download>.

¹⁸ Wendy Carrillo, "Third-Party Food Delivery Platforms: Food Safety," Carrillo, Wendy, last modified September 18, 2020, accessed May 12, 2022, <https://openstates.org/ca/bills/20192020/AB3336/>.

¹⁹ SEC. 2. Section 113982 of the Health and Safety Code is amended to read: 113982.



Table 1 (Cont.)

Laws	Sanitary Transportation of Human and Animal Food ²⁰	FDA Guidelines for Food Protection from Contamination for New Business Models ²¹	The Law of California: AB3336 Third-Party Food Delivery Platforms (Food Safety) ²²
	Duties of transporter: Adequate controls of temperature, preventing contamination of ready-to-eat food from touching raw food, preventing contamination of food from non-food items in the same load or previous load, protection of food from cross-contact, as well as training of personnel,		(A) The interior floor, sides, and top of the food holding area must be clean and capable of withstanding frequent cleaning. (B) Ready-to-eat food must be protected from contamination. (C) The food must be maintained at a temperature necessary to prevent food from becoming spoiled. (D) All bags or containers in which ready-to-eat foods

²⁰ U.S. Food & Drug Administration, “Fsmas Final Rule on Sanitary Transportation of Human and Animal Food,” last modified September 12, 2018, accessed May 12, 2022, <https://www.fda.gov/food/food-safety-modernization-act-fsma/fsma-final-rule-sanitary-transportation-human-and-animal-food>.

²¹ U.S. Food & Drug Administration, “New Era of Smarter Food Safety,” accessed May 12, 2022, <https://www.fda.gov/media/139868/download>.

²² Wendy Carrillo, “Third-Party Food Delivery Platforms: Food Safety,” Carrillo, Wendy, last modified September 18, 2020, accessed May 12, 2022, <https://openstates.org/ca/bills/20192020/AB3336/>.

Table 1 (Cont.)

Laws	Sanitary Transportation of Human and Animal Food ²³	FDA Guidelines for Food Protection from Contamination for New Business Models ²⁴	The Law of California: AB3336 Third-Party Food Delivery Platforms (Food Safety) ²⁵
	documentation of the training and maintenance of written records of procedures.		are being transported or delivered from food facility to customers through third-party digital platform service providers must be closed by the food facility with a tamper-evident method before handing them to the food transporters. Moreover, the food holding areas must be in standard sanitary conditions and the food must be kept in an appropriate temperature to prevent it from becoming spoiled.

²³ U.S. Food & Drug Administration, “Fsm Final Rule on Sanitary Transportation of Human and Animal Food,” last modified September 12, 2018, accessed May 12, 2022, <https://www.fda.gov/food/food-safety-modernization-act-fsma/fsma-final-rule-sanitary-transportation-human-and-animal-food>.

²⁴ U.S. Food & Drug Administration, “New Era of Smarter Food Safety,” accessed May 12, 2022, <https://www.fda.gov/media/139868/download>.

²⁵ Wendy Carrillo, “Third-Party Food Delivery Platforms: Food Safety,” Carrillo, Wendy, last modified September 18, 2020, accessed May 12, 2022, <https://openstates.org/ca/bills/20192020/AB3336/>.



Table 1 (Cont.)

Laws	Sanitary Transportation of Human and Animal Food ²⁶	FDA Guidelines for Food Protection from Contamination for New Business Models ²⁷	The Law of California: AB3336 Third-Party Food Delivery Platforms (Food Safety) ²⁸
Cooperation with Government Agency		Cooperation with the United States Department of Agriculture, industry, other agencies, and stakeholders concerning consumers.	
Other Measures		Promoting utilization of technology that automatically examines risk factors of product related to new business models such as time, temperature, tampering, and traceability information.	

²⁶ U.S. Food & Drug Administration, “Fsms Final Rule on Sanitary Transportation of Human and Animal Food,” last modified September 12, 2018, accessed May 12, 2022, <https://www.fda.gov/food/food-safety-modernization-act-fsma/fsma-final-rule-sanitary-transportation-human-and-animal-food>.

²⁷ U.S. Food & Drug Administration, “New Era of Smarter Food Safety,” accessed May 12, 2022, <https://www.fda.gov/media/139868/download>.

²⁸ Wendy Carrillo, “Third-Party Food Delivery Platforms: Food Safety,” Carrillo, Wendy, last modified September 18, 2020, accessed May 12, 2022, <https://openstates.org/ca/bills/20192020/AB3336/>.

Table 1 (Cont.)

Laws	Sanitary Transportation of Human and Animal Food ²⁹	FDA Guidelines for Food Protection from Contamination for New Business Models ³⁰	The Law of California: AB3336 Third-Party Food Delivery Platforms (Food Safety) ³¹
		Facilitating development of food ingredients and new and safe manufacturing technology in order to support innovation, products and safe access of market without delay. Reviews from consumers	

²⁹ U.S. Food & Drug Administration, “Fsmas Final Rule on Sanitary Transportation of Human and Animal Food,” last modified September 12, 2018, accessed May 12, 2022, <https://www.fda.gov/food/food-safety-modernization-act-fsma/fsma-final-rule-sanitary-transportation-human-and-animal-food>.

³⁰ U.S. Food & Drug Administration, “New Era of Smarter Food Safety,” accessed May 12, 2022, <https://www.fda.gov/media/139868/download>.

³¹ Wendy Carrillo, “Third-Party Food Delivery Platforms: Food Safety,” Carrillo, Wendy, last modified September 18, 2020, accessed May 12, 2022, <https://openstates.org/ca/bills/20192020/AB3336/>.



Table 2 Summary of Australia's legal measures on public safety regarding food delivery on digital platform

Regulations under a Guide to Managing Work Health and Safety in the Food Delivery Industry of New South Wales, this law was specifically promulgated to regulate digital platforms to create a safe environment for transportation by developing a system of digital platforms. In addition, restaurants are responsible for packaging and receiving food that is safe for transportation. For carriers, the law sets out the characteristics of carriers that must be trained and assessed. Thus, the law requires all business operators and carriers to be socially responsible in the processes in which they are involved.

Regulations under a Guide to Managing Work Health and Safety in the Food Delivery Industry of New South Wales ³²	Details of Guidelines	Notes
Parties falling under Reg- ulations	Platforms: Platforms refer to business entrepreneur that utilizes application to conduct business of food ordering and delivery by marketing their service to restaurants and transporters who can register with the platforms to deliver orders made via their application and there will be delivery service to customers provided by transporters who have registered with the platforms.	

³² Safework NSW, A Guide to Managing Work Health and Safety in the Food Delivery Industry (Gosford, NSW: NSW Government), 5, accessed May 12, 2022, https://www.safework.nsw.gov.au/__data/assets/pdf_file/0020/1004645/a-guide-to-managing-whs-in-the-food-delivery-industry.pdf.

Table 2 (Cont.)

Regulations under a	Details of Guidelines	Notes
Guide to Managing		
Work Health and Safety		
in the Food Delivery		
Industry of New South		
Wales ³³		
	<p>Transporter:</p> <p>Transporters refer to food transporters whether they are freelancers. In case that the transporters allow other persons to work in their place or in the name of their accounts, such transporters are still not be relieved of his duties.</p>	
Rights and Duties of	Duties of digital platform service providers:	
Digital Platform Service	Digital platform service providers have the following	
Providers	<p>duties:</p> <p>First, to give information, to train, to give advice or provide regulations necessary for protecting public from risks; Second, to provide and maintain safe plant and structures; Third, to provide and maintain safe system of work; Fourth, to provide and maintain working environment that contains no risk concerning health and safety; Fifth, to provide adequate employment welfare; Sixth, to assess condition of workplace to prevent injury or sickness.</p>	

³³ Safework NSW, A Guide to Managing Work Health and Safety in the Food Delivery Industry (Gosford, NSW: NSW Government), 5, accessed May 12, 2022, https://www.safework.nsw.gov.au/__data/assets/pdf_file/0020/1004645/a-guide-to-managing-whs-in-the-food-delivery-industry.pdf.



Table 2 (Cont.)

Regulations under a Guide to Managing Work Health and Safety in the Food Delivery Industry of New South Wales ³⁴	Details of Guidelines	Notes
Supportive Delivery Environment	<p>Application should ensure that the system of work including delivery process is designed by taking the safety of transporters and others into account. For example, control in the application is designed to prevent the transports from working excessive hours, give notifications reminding riders to take sufficient breaks and ensure that the application is based on average rider speeds and predicted traffic conditions.</p> <p>Provide regulations on health and safety of work and amend such regulations when there are new harmful risks.</p> <p>Explicitly notify customers of intolerance to every type of violence in service agreement, terms and conditions of the application and social media.</p> <p>Provide information to transporters on how to handle customers when conflicts arise and how to make a complaint to platform, including complete steps to report the incidents.</p>	

³⁴ Safework NSW, A Guide to Managing Work Health and Safety in the Food Delivery Industry (Gosford, NSW: NSW Government), 5, accessed May 12, 2022, https://www.safework.nsw.gov.au/__data/assets/pdf_file/0020/1004645/a-guide-to-managing-whs-in-the-food-delivery-industry.pdf.

Table 2 (Cont.)

Regulations under a Guide to Managing Work Health and Safety in the Food Delivery Industry of New South Wales ³⁵	Details of Guidelines	Notes
	<p>Vehicles employed in delivery should have white lights in the front, red lights in the back and red reflectors in the back of bicycles which can be used in the dark or during emergency, at least one functioning break, klaxon, or other warning devices. Every motorcycle or bicycle must be ready for use and presently registered.</p> <p>Transporters should be advised to regularly check their vehicles before hitting the road.</p> <p>Motorcycles or bicycles must be regularly maintained. Transporters should be advised about safety equipment according to the traffic laws. Helmets must be standard guaranteed and tightly fastened. Moreover, there should be a phone mount on the motorcycle handlebar.</p> <p>Material and equipment employed in delivery must be suitable and up to standard.</p>	

³⁵ Safework NSW, A Guide to Managing Work Health and Safety in the Food Delivery Industry (Gosford, NSW: NSW Government), 5, accessed May 12, 2022, https://www.safework.nsw.gov.au/__data/assets/pdf_file/0020/1004645/a-guide-to-managing-whs-in-the-food-delivery-industry.pdf.



Table 2 (Cont.)

Regulations under a Guide to Managing Work Health and Safety in the Food Delivery Industry of New South Wales ³⁶	Details of Guidelines	Notes
Rights and Duties of Restaurants on Digital Platform	Duties of Restaurant: Restaurants refer to business entrepreneur that has duties towards both employees of the restaurants, transporters ³⁷ , customers and other people ³⁸ in scopes it has control over. They also have the duties to suggest platforms about application, algorithm, and methods ³⁹ , as well as the duties to provide suitable equipment for their purposes. For example, containers must be suitable for the food that will be delivered, etc. Moreover, information should be given to platforms about safe and legal parking, waiting and pickup locations, compliance to specific regulations on food delivery or other safety measures (such as information on public health), etc. Furthermore, restaurants must take into account traffic conditions and pickup location they suggest would not be a hindrance to the transporters.	

³⁶ Safework NSW, A Guide to Managing Work Health and Safety in the Food Delivery Industry (Gosford, NSW: NSW Government), 5, accessed May 12, 2022, https://www.safework.nsw.gov.au/__data/assets/pdf_file/0020/1004645/a-guide-to-managing-whs-in-the-food-delivery-industry.pdf.

³⁷ The Work Health and Safety Duties section 19(1)

³⁸ The Work Health and Safety Duties section 19(2)

³⁹ Safework NSW, A Guide to Managing Work Health and Safety in the Food Delivery Industry

Table 2 (Cont.)

Regulations under a Guide to Managing Work Health and Safety in the Food Delivery Industry of New South Wales ⁴⁰	Details of Guidelines	Notes
Definitions of Food Trans- porters	Transporters refer to food transporters whether they are freelancers. In case the transporters allow other persons to work in their places or in the name of their accounts, such transporters are still not relieved of his duties.	
Qualifications of Trans- porters	<p>Regarding training:</p> <p>Transporters must be trained and review their lessons on traffic and revise their training when new harmful risks are notified or identified.</p> <p>Regarding evaluation:</p> <p>Annual evaluation must ensure that transporters still possess necessary skills and capabilities to work safely.</p>	

⁴⁰ Safework NSW, A Guide to Managing Work Health and Safety in the Food Delivery Industry (Gosford, NSW: NSW Government), 5, accessed May 12, 2022, https://www.safework.nsw.gov.au/__data/assets/pdf_file/0020/1004645/a-guide-to-managing-whs-in-the-food-delivery-industry.pdf.



Table 2 (Cont.)

Regulations under a Guide to Managing Work Health and Safety in the Food Delivery Industry of New South Wales ⁴¹	Details of Guidelines	Notes
Rights and Duties of Transporters	Duties of transporters: Transporters must partake in, for example, training program and workshops in order to understand signs of fatigue and its impact on driving efficiency, how to notice symptoms of exhaustion and stop driving when exhausted, that maximum working hour must not exceed 12 hours per a time period of 24 hours, how to manage work- life schedule to ensure that there are at least 8 hours sleep per day ⁴² , including tracking of all safe work system as notified by the application, utilization of all application's safety features, and report of risk towards safety in concern with the use of application.	
Liability	Platforms, transporters, and restaurants must cooperate to ensure reduction of risks towards health and safety. More than one party can have the same duty and one party may have more duties than another according to the principle of whether one party has the duty as following:	

⁴¹ Safework NSW, A Guide to Managing Work Health and Safety in the Food Delivery Industry (Gosford, NSW: NSW Government), 5, accessed May 12, 2022, https://www.safework.nsw.gov.au/__data/assets/pdf_file/0020/1004645/a-guide-to-managing-whs-in-the-food-delivery-industry.pdf.

⁴² Safework NSW, A Guide to Managing Work Health and Safety in the Food Delivery Industry, 11, accessed May 12, 2022, https://www.safework.nsw.gov.au/__data/assets/pdf_file/0020/1004645/a-guide-to-managing-whs-in-the-food-delivery-industry.pdf

Table 2 (Cont.)

Regulations under a Guide to Managing Work Health and Safety in the Food Delivery Industry of New South Wales ⁴³	Details of Guidelines	Notes
	First, persons cannot transfer the risks concerning food delivery to other people; Second, persons have a responsibility of their own health and safety; Third, each person must perform his duty in the scopes he has power and control over.	
Cooperation with government agency	Development and compliance to procedures in order to help enforce the laws. Immediately report incidents to the police in case of violence or aggression in regard to assault or physical harassment.	

⁴³ Safework NSW, A Guide to Managing Work Health and Safety in the Food Delivery Industry (Gosford, NSW: NSW Government), 5, accessed May 12, 2022, https://www.safework.nsw.gov.au/__data/assets/pdf_file/0020/1004645/a-guide-to-managing-whs-in-the-food-delivery-industry.pdf.



Table 3 Summary of People’s Republic of China’s legal measures on consumer protection regarding food delivery on digital platform

Regulations under China’s Food Safety Law 2015, This law stipulates that digital platform operators and carriers are responsible for consumers. Including the government has a role in controlling digital platform operators to comply with various conditions. In addition, digital platform operators must continuously report information to government agencies. This law shows the role and approach of the government in regulating digital platform businesses in the context of private-sector competition.

Regulations under the China’s Food Safety Law 2015	Details of Guidelines	Note
Parties falling under Regulations	All of those who are involved in food process.	
Rights and Duties of Digital Platform Service Providers	Recorded information must be kept and maintained at least for six months from expiration date of the product or no less than two years for the product which has no explicit shelf life. ⁴⁴ Moreover, platform service providers must monitor business conduct of restaurants	
	on the platforms by establishing department of food safety or assigning food safety specialists to inspect activity and information of online food business.	
Supportive Delivery Environment	Platforms have the duty to establish rules to regulate restaurants.	
Qualifications of Restaurants on Digital platform	Restaurants that have been registered with the local government.	

⁴⁴ Wǎng LUÒ SHÍ Pǐn Ān Quán Wēi Fǎ Xíng Wéi Chǎ Chǔ Bàn Fǎ (网络食品安全违法行为查处办法) [Measures of Investigation of Illegal Conducts Concerning the Safety of Food Sold Online] (promulgated by China Food and Drug Administration, July 13, 2016, effective Oct. 1, 2016) art. 13, 2016 Lexis China Law 370, 5 (China).

Table 3 (Cont.)

Regulations under the China's Food Safety Law 2015	Details of Guidelines	Note
Rights and Duties of Restaurants on Digital platform		
Definition of Food Transporters	Food transporters	
Qualifications of Transporters		Food transporters must have driven license and have no history in regard to driving dangerously.
Rights and Duties of Transporters	Food facility or seller, including other persons who are involved in food process, must comply to food safety standards, namely food facility or seller must use safe and harmless containers, equipment and gadgets to store, deliver and load the food; hygiene maintenance, prevention of food contamination, compliance to special regulations such as temperature and humidity for food safety and prohibition to store or deliver poisonous or harmful food.	

**Table 3 (Cont.)**

Regulations under the China's Food Safety Law 2015	Details of Guidelines	Note
Liability	<ul style="list-style-type: none"> - Platform providers can be ordered to suspend their service and prosecuted in the following cases, namely death or grievous bodily harm resulting from food, severe incidents concerning food safety or violation of rights and legal benefits of consumers that causes acute impact on public. - Law has established liability in case those who are involved in the activity of food storage, delivery or loading violate this law. In such case, provincial food, and drug administration or higher will give them a warning and order them an immediate correction. If such order is denied, their service will be suspended in order to be corrected and they will be fined in an amount of 10,000 to 50,000 yuan. In a severe case, their license can be revoked. 	
Cooperation with Government Agency	Platform service providers have the duty to stop their service and report on violation of food safety regulations at a designated time when a complaint of severe violation has been made.	

4.3 Development of legal measures on public safety

According to the study of Thai laws and practice guidelines on public safety regarding food delivery on digital platform, relevant laws are Land Transport Act B.E. 2522 (1979), Vehicle Act B.E. 2522 (1979) that directly related to the transport of food digital platforms because these law controls land transport. Announcement of Department of Land Transport Re: Practice Guideline for Package and Food Delivery Business via Motorcycle, and Announcement of Department of Land Transport Re: Feature, Size and Installment of Box or Storage Compartment of Motorcycle B.E. 2564 (2021). By comparing these laws and information from sample groups, legal limitations are found namely, the laws neither encompass all the essential and necessary details in dimensions of safety by using traffic and vehicles nor liability of digital platform service providers. Moreover, Announcement of Department of Land Transport Re: Practice

Guideline for Package and Food Delivery Business via Motorcycle which aims to regulate public safety concerning food delivery business on digital platforms also lacks any sanction.

In addition, comparing with the foreign laws of selected countries and information from sample groups suggest that essential and necessary details, as well as sanction, should be added to Announcement of Department of Land Transport Re: Practice Guideline for Package and Food Delivery Business via Motorcycle which directly aims to regulate public safety on food delivery business on digital platforms. Such details should comprise of a definition of digital platform service providers, rights and duties of digital platform service providers, rights and duties of restaurants, qualifications and duties of food transporters and provisions of sanction. All of which would make legal measures on public safety more practical.

4.4 Development of legal measures on food hygiene and safety

According to the study, Thai laws does not impose rights and duties of digital platform service providers concerning food hygiene and safety. As for those conducting food businesses, they can practically apply to join the digital platforms without restaurant permission or registration. Furthermore, food transporters are not legally defined as food handlers and their requirements or duties to support hygiene and safe consumption of food are not incorporated in the laws.

In accordance with the comparative study, information from interviews and broad discussions, it can be concluded that amendments should be made to Thai regulations concerning sanitary in food delivery business on digital platforms. To do so in the manner that is in accordance with existing regulations on food business and handler, amendments should be made in the form of ministerial regulation. Therefore, this study proposes that to develop legal measures on food hygiene and safety, the Ministry of Public Health's Ministerial Regulation Re: Regulations on Sanitation in Food Delivery Business on Digital Platform should be enacted. Its essentials should encompass definitions, rights and duties of digital platform service providers, qualifications and duties of restaurants, qualifications, and duties of food transporters, as well as provisions of fine as a sanction. Moreover, in the future, Product Liability Act B.E. 2551 (2008) should

be amended to hold digital platform service providers liable, the proposed ministerial regulation can be enforced alongside to enhance efficiency of regulation and consumer protection.

4.5 Increase of incentives and measures to enhance efficiency on public safety, food hygiene and safety

Information from sample groups leads to several additional suggestions which are measures to create incentives for people to comply to public safety, food hygiene and environment protection measures.

5. Conclusion and Recommendations

Conclusion and recommendations are as follows:

5.1 Conclusion

At present, food delivery business on digital platforms has become very popular and its users tend to increase continuously. The growth of digital platforms for food delivery benefits the economy, employment and provides convenience accommodating to current world where time resource is scarce. However, on the other hand, with rising numbers of digital platform users of food delivery, transporters who have to drive or ride faster to deliver food within a designated time and reach customers' expectation, together with the fact that more restaurants have chosen these platforms to sale their food, issues have occurred: existing laws on public safety in using of traffic and vehicles do not encompass management system namely, digital platform system management, co-responsibility with transporter in prescription of materials and tools used in a delivery, rights and duties of restaurants on public safety, employment conditions in case of transporters with previous criminal record, regular training of transporters on public safety, suspension of transporters as well as penalty.

Moreover, when considering the dimension of food hygiene and safety, it is found that the government gives precedence to the issue of hygiene and safety in food delivery service especially during COVID-19 pandemic. Despite the decline of outbreak, consumers still have the rights to hygiene and safety of food. Such rights should not be neglect whether the delivery comes from digital platforms. Nonetheless, legal limitations

persist namely, the lack of provisions on the rights and duties of digital platform service providers, qualifications and duties of food restaurants that are permitted to provide delivery service on digital platforms and qualifications and duties of transporters as a part of food process, as well as legal sanction.

5.2 Recommendations

Result of the study suggests as follows:

5.2.1 Proposal to add the following clauses to Announcement of Department of Land Transport Re: Practice Guideline for Package and Food Delivery Business via Motorcycle

According to the study, Thailand's laws and guidelines do not have measures to regulate digital platform providers in public safety systems. The study and interview data showed that system development using technology can be done as well as saving the cost of control in the long run. Therefore, leading to recommendations for the announcement of Department of Land Transport Re: Practice Guideline for Package and Food Delivery Business via Motorcycle with the following details:

“Clause Practice guidelines on management of digital platform system to standardize public safety

A digital platform service provider must establish management systems on digital platforms to increase standard of safety in land transport as the followings:

1) Checkup system for vehicles, transporters, and tools whether they are ready to be employed for service which includes, but not limited to,

1.1) A transport must provide information on the delivery vehicle such as model, brand, year of manufacture, mandatory insurance according to Road Accident Victims Protection Act, B.E. 2535 (1992), driving license, installation of compartment or box for containing food. Such information must be regularly updated within a period of time that digital platform service provider has prescribed.



1.2) A digital platform service provider must regularly review the information on vehicles and transporters and ensure their compliance to the laws and company's regulations.

1.3) In case the review finds that the requirement according to clause 1.1 is not met or the information does not comply with the laws or digital platform's regulations, the digital platform service provider must not allow such transporter to continue providing delivery service for the digital platform, as however previously agreed.

2) The system must designate speed and reasonable time that a consumer can expect the food to be delivered and are safe for driving. Such designation must include, but not limited to

2.1) A digital platform service provider must establish a warning system in case the transporter has exceeded designated speed during the delivery.

2.2) A digital platform service provider must establish a system that delays the transport from completing delivery order on the system earlier than designated time period.

2.3) Establish a system that can cease the operation when the gadget (mobile phone) moves at the speed exceeding the designated limit by calculating movement of Global Positioning System or GPS.

3) Regulating system for transporters' working hours

A digital platform service provider must calculate time period for driving and regulate riders' working hours such as a system that declines or decreases transporters' food orders when their working hours have exceeded a time period that is suitable for health or fitness.

4) Warning system in case of fatigue that transporters might have accumulated from various factors

A digital platform service provider must establish a system that notifies transporters to take a break by taking information of long and continuous driving hours into calculation, as well as taking other circumstantial factors such as temperature and traffic into consideration.

5) Regulating system for quantity of delivery

A digital platform service provider must establish a system that limits quantity of food order or automatically suggests that more transporters are required for such delivery. The calculation should be made by taking weight or size of goods into consideration.

6) Complaint system

Restaurants or consumers must be able to rate their satisfaction or express their complaints via digital platform service providers with respect to transporters' delivery as well as safety of material or tools utilized in the delivery.

In summary, the Announcement of Department of Land Transport Re: Practice Guideline for Package and Food Delivery Business via Motorcycle recommends control systems for public safety and transporters using vehicle inspection technologies, including checkup system for vehicles, transporters, and tools, the system must designate speed and reasonable time, regulating system for transporters' working hours, the warning system in case of fatigue that transporters might have accumulated from various factors, regulating system for quantity of delivery and complaint system.

5.2.2 Proposal to add the following clauses to Announcement of Department of Land Transport Re: Practice Guideline for Package and Food Delivery Business via Motorcycle

According to the study of laws and guidelines in Thailand, there are no measures to regulate transporters and restaurant operators for public safety. The study and interview data found that building public safety comprehensively requires the cooperation of transporters and restaurants, leading to recommendations for the promulgation of the Announcement of Department of Land Transport Re: Practice Guideline Package and Food Delivery Business via Motorcycle

“Addition to clause (1) 1 paragraph two as the followings

A transporter who has a previous criminal record must work under certain conditions within a period and be evaluated. Such conditions and time period can be reduced according to the agreement between digital platform service provider and the transporter.”

“Addition to clause (2) 1 as the followings

Before a transporter can get his assignment, training must be held within a period of time according to the agreement between digital platform service provider and the transporter.”

“Addition to clause (4) 1 as the followings

In case of complaint or violation of traffic law, digital platform service provider can suspend the service of such transporter for a period of time and under conditions according to the agreement.”

“Addition to clause (2) 2 as the followings

Digital platform service provider has the duty to establish working conditions of food transporters concerning utilization of materials and tools in food delivery according to safety standard as required by the laws.”

“Addition of clause Restaurants are to give information to digital platforms concerning safe and legal venue for parking, waiting area and pickup location. When suggesting pickup locations, restaurants are to ensure that food preparation would not become an obstacle when transporters pick up the food.

In case the restaurants fail to perform as they suggest the transporters or the transports fail to comply as suggested, restaurants and transporters can report via the system. Such a report will be taken into consideration for evaluation. In case of violation, digital platform service providers can suspend the service of such restaurants or transporters under conditions according to the agreement.”

“Addition of provision of sanction

Proposal to add a high amount of fine in the provision of sanction in case there is a violation to Announcement of Department of Land Transport Re: Practice Guideline for Package and Food Delivery Business via Motorcycle”

Summary Proposal to add the following clauses to Announcement of Department of Land Transport Re: Practice Guideline for Package and Food Delivery Business via Motorcycle is the assignment of duties and responsibilities to the carrier such as background check, training, etc. and assign responsibilities to the restaurant

such as food delivery places, packaging, etc.

5.3 Regarding food hygiene and safety

According to the law study, there are no specific measures to supervise the cleanliness and safety of food from food transportation using digital platform services. The study and interview data found that comprehensive consumer protection requires cooperation from digital platform operators, restaurants, and food carriers, leading to recommendations for the implementation of the Regulations on Sanitation in Food Delivery Business on Digital Platform

Result of the study proposes that Ministry of Public Health’s Ministerial Regulation Re: Regulations on Sanitation in Food Delivery Business on Digital Platform should be enacted with the following details:

1) Rights and duties of digital platform service providers

A digital platform service provider has the following rights and duties:

1.1) A digital platform service provider must establish measures to assess food hygiene and safety by regulating restaurants.

A digital platform service provider has the duty to timely report violation of food hygiene and safety within the designated period in case it has been ruled in finality to be guilty concerning food hygiene and safety by the court.



(1) A digital platform service provider must only provide service to restaurants that have permit or have been registered according to the laws. Restaurants must submit documents as evidence when applying to digital platform service providers.

(2) A digital platform service provider has the right to suspend its service to restaurants which have violated measures as provided by the laws regarding food hygiene and safety, according to conditions previously agreed by the parties.

(3) A digital platform service provider must take actions to promote sanitation, namely distribution of hygiene products such as sanitizing gel and gloves, change of containing bag to a new one, training of food transporters on hygiene, health checkup service for food transporters and so forth, according to conditions previously agreed by the parties.

(4) A digital platform service provider has the duty to establish a complaint system concerning food hygiene and safety namely, a system of complaint about restaurants by food transporters, a system of complaint about restaurants by consumers and a system of complaint about food transporters by consumers concerning food hygiene and safety.

1.2) Qualifications and duties of restaurants

Qualifications and duties of restaurants are as the followings:

(1) Qualifications of restaurants

(1.1) A restaurant must have a permit or be registered according to the laws.

(1.2) A restaurant must exhibit its permit or registration document and always update information.

2) Duties of restaurants

(2.1) A restaurant has the duty to establish food pickup location which is hygienic and not crowded.

(2.2) Taking food hygiene and safety from contamination into consideration, a restaurant has the duty to provide and contain food in the container suitable for food that is to be delivered.

(2.3) Taking the amount of delivery time into consideration, a restaurant is

prohibited to deliver food which is expected to become spoiled or unsafe to the consumers by the time it is delivered.

3) Qualifications and duties of food transporters

(3.1) Qualifications of food transporters

Food transporters of digital platform are considered as food handlers according to the laws.

(3.2) Duties of food transporters

Ready-to-eat food which is ordered via digital platform service providers must be delivered in the following manners according to the regulations.

(a) The interior floor, sides, and top of the food holding area must be clean and capable of withstanding frequent cleaning.

(b) Ready-to-eat food must be protected from contamination.

(c) The food must be preserved at a temperature necessary to prevent spoilage.

(d) All bags or containers in which ready-to-eat foods are being transported or delivered from food facility to customers through digital platform service providers shall be closed by the food facility with a tamper-evident method before handing them to the food transporters.

4) Sanctions

This research proposes addition of fine penalty in high rate in case of violation of Ministry of Public Health's Ministerial Regulation Re: Regulations on Sanitation in Food Delivery Business on Digital Platform.

In summary, Regulations on Sanitation in Food Delivery Business on Digital Platform therefore defines the duties and responsibilities of 3 parties: rights and duties of digital platform service providers, duties of restaurants, qualifications, and duties of food transporters and there should be a penalty for those involved who violate the law.



5.4 Addition of measures to increase incentives and enhance efficiency of public safety and food hygiene and safety

In addition to recommendations on legal measures and guidelines, the study also found recommendations on incentive measures, namely measures on public safety, measures on food hygiene and safety and measures on the environment.

5.4.1 Measures on public safety

1) Increase of payment for transporters in case of heavy traffic or rain but refrain from taking next orders until designated time expires to prevent transporters from hastening to reach payment or delivery target.

2) Establishment of application system to regularly have training on public safety as a condition for restaurants to be able to continue conducting business and transporters to continue working for digital platforms.

5.4.2 Measures on food hygiene and safety

1) Encouraging reduction of operational fee for restaurants that receive high score for food hygiene and safety.

2) Increase of payment for food transporters who have food containers with temperature system for both hot and cold.

5.4.3 Measures on environment

1) Increase of food price in case customers order ready-to-eat container so the restaurants have more money to find the suitable food containers and reduction of food price for the customers who do not order for ready-to-eat container. This is to encourage reduction of waste according to polluters pay principle (PPP).

2) Decrease utilization of foam container to reduce waste that is difficult to decompose by establishing an application system that the consumer can choose to order from restaurants which use environmental-friendly containers or choose to use non-foam containers (proposal from foundation for consumers). This would consequentially help create awareness towards environmental problems of restaurants and consumers each time they order food via digital platforms.⁴⁵

⁴⁵ This research article is a part of research program on Enhancement of Efficiency in Regulating Restaurants on Digital Platforms to Protect Consumers in the Age of Super-Smart Technologies. The

In conclusion, this incentive is the use of cost or added value to responsible parties to raise awareness and enhance public safety, hygiene and food safety and environmental protection, which is expected to better promote public safety and consumer protection.



References

- Baiter, Willem H., Richard Lago, and Nicolas Stern. "Promoting an Effective Market Economy in a Changing World." Accessed May 12, 2021. <http://eprints.lse.ac.uk/3740/>.
- Carrillo, Wendy. "Third-Party Food Delivery Platforms: Food Safety." Carrillo, Wendy. Last modified September 18, 2020. Accessed May 12, 2022. <https://openstates.org/ca/bills/20192020/AB3336/>.
- Kasikorn Research Center. "Food Delivery Year 2022 Continuously Expanding: Application Service Providers Advance into Other Provinces to Broaden Their Customers Base." Accessed May 12, 2022. <https://www.kasikornresearch.com/th/analysis/k-econ/business/Pages/Food-Delivery-z3289.aspx>.
- Plachaipirosilp, Suchada. "Usages Trend of Mobile Application." *Journal of Executive* 31, no. 4 (2011): 110-115.
- Safework NSW. *A Guide to Managing Work Health and Safety in the Food Delivery Industry* Gosford, NSW: NSW Government. Accessed May 12, 2022. https://www.safework.nsw.gov.au/__data/assets/pdf_file/0020/1004645/a-guide-to-managing-whs-in-the-food-delivery-industry.pdf.
- Shoemaker, Roger. *Communication of Innovations: A Cross-Cultural Approach*. New York: The Free, 1978.
- U.S. Food & Drug Administration. "Fsma Final Rule on Sanitary Transportation of Human and Animal Food." Last modified September 12, 2018. Accessed May 12, 2022. <https://www.fda.gov/food/food-safety-modernization-act-fsma/fsma-final-rule-sanitary-transportation-human-and-animal-food>.
- U.S. Food & Drug Administration. "New Era of Smarter Food Safety." Accessed May 12, 2022. <https://www.fda.gov/media/139868/download>.
- Wachiraporn, Kladcharoen. "Legal Problems Regarding the Business of Food Delivery Service Application." Accessed May 12, 2022. http://www.lawgrad.ru.ac.th/tractsFile/6124011316/161406304643cef74819f8de2acc8385fa177a2217_abstract.pdf.
- Yotkaew, Pramote. "Digital Marketing and Lifestyle Changes in Thai Society ", *Journal of Multidisciplinary Academic Research and Development* 3, no. 1 (2021): 18-19.