Delivery System Performance Effect on Customer Satisfaction: Comparative Research of Food Delivery Company Meituan in China and Glovo in Cote d'Ivoire

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---*ABSTRACT*---

The performance of delivery systems in food delivery services plays a significant part in boosting customer satisfaction. This is accomplished by ensuring that delivery experiences are punctual, accurate, and of a high quality, and that they either match or surpass the expectations of the client.

This research aimed to examine the influence of delivery system performance on customer satisfaction in the food delivery services of China and Côte d'Ivoire. This study has examined multiple multinational corporations operating respectively in these particular nations (Meituan in China and Glovo in Côte d'Ivoire) and analyze their distinct strategies for enhancing delivery system efficiency.

The first section provided an overview of the history of food delivery services and explain the importance of this research. The second phase of the study was doing a thorough literature analysis to identify any deficiencies in current studies regarding delivery system performance, performance management, and how it affects customer satisfaction. The primary objective was to evaluate the performance of Meituan in China and Glovo in Côte d'Ivoire, with the aim of gaining insights into the levels of consumer satisfaction in these countries. The third portion presented the framework and hypotheses that will serve as the guiding principles for the study process. The data collection process entailed surveying 500 respondents in each country to obtain insights into their satisfaction levels regarding the delivery services provided by Meituan and Glovo. The Smart PLS software was employed to construct a Structural Equation Model (SEM) that corresponds to the research framework. The data analysis encompassed a correlation matrix, Confirmatory Factor Analysis, regression, and a goodness of fit assessment. Additionally, one-factor and two-factor analyses were performed to assess important performance indicators and compare the outcomes against established benchmarks. The results of the research suggest that Meituan's delivery system exhibits a notable degree of sophistication, which consequently results in elevated levels of customer satisfaction in comparison to Glovo in Côte d'Ivoire. The rationales for these findings will be investigated in the fourth portion of the study and succinctly outlined in the fifth section. The study's findings possess ramifications for both Meituan and Glovo. In order to capitalize on its status as a worldwide frontrunner in the food delivery sector, Meituan may enhance and sustain the performance of its delivery infrastructure. By studying Meituan's success, Glovo in Côte d'Ivoire can improve its own delivery system and ensure that customers receive superior services.

In summary, this study enhances the existing body of knowledge regarding the correlation between the efficacy of food delivery systems and the level of consumer satisfaction within this sector. The results of this study will furnish significant knowledge for future research in this field and serve to guide strategic decisions for businesses operating in this industry.

Key Words: Customer Satisfaction; Delivery System, Key Performance Indicator; Structural Equation Modeling; Confirmatory Factor Analysis

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I.   Introduction

1.1 Introduction to Research Background

The concept of food delivery is not a novel advancement. Message carriers transported meals to monarchs and other high-ranking officials during the earliest documented food delivery systems, which originated in ancient civilizations. Food delivery companies expanded over time in order to accommodate a greater number of customers. In the 19th century, restaurants initiated the provision of home delivery services to affluent clientele. The efficiency and scope of the delivery system were limited due to the reliance on horse-drawn carriages and foot messengers to provide these services. People's desired goods and services from the preceding decades were neither produced nor made accessible for utilization. Provisions of food and other

merchandise were widely disseminated and exclusively accessible during designated periods of the year. Historically, people were able to either ingest objects immediately or transport them to a designated location where they could be stored for future use. The temporary restriction of product flow for consumption to specific individuals was caused by insufficient infrastructure for transportation and storage. As a result of this restricted movement-storage system, individuals were compelled to dwell in close proximity to the origins of manufacturing and consume an extremely restricted assortment of goods. Presently, the consumption and production activities of numerous nations are confined to a relatively limited geographical area. In emerging nations across the continents of Asia, South America, Australia, and Africa, there remain noteworthy instances wherein certain populations reside in rural areas and self-sufficient cities, where the majority of necessities are procured or manufactured locally. There were few imports of goods from other nations. Consequently, economic health and overall product efficacy are poorly maintained. In this class of economy, the exchange of goods with other producing regions can be facilitated by a cost-effective and efficient supply network.

Delivery refers to the procedure by which products or services are provided. It is fundamental for any organization engaged in production or distribution. The efficacy of the supply chain is dependent on logistics, which guarantees that products reach customers. Order coordination, delivery scheduling, dispatching, invoicing, and payment collection are included in this. The importance of delivery and information technologies is growing. Organizations have a tendency to become more interconnected with one another as technological information advances.

Consequently, enhancing the efficiency of the delivery system becomes imperative; this necessitates the implementation of information exchange and supply chain integration that are both effective [1]. The significance of strong collaboration in attaining and maintaining a competitive advantage is growing. Subsequent to now, this objective could potentially be achieved via significant service, commercial, social, and technological connections [2] .

As per the findings of Håkansson and Persson (2004) [3], the logistics industry has witnessed the emergence of at least three significant logistics solutions in recent years. Initially, an increasing degree of integration is observed between supply chain operations conducted internally and external to the organisation, as an effort to curtail expenses linked to the increased demands for collaboration and interaction with suppliers and customers. An additional characteristic of evolving delivery models is the heightened specialization of specific companies. For instance, the outsourcing of routine operations such as logistics is an illustration of this trend. The third trend relates to innovation and change. In light of the importance of adapting to shifting market demands, organizations have been obligated to enhance their agility, responsiveness, and intelligence. Organizations have undergone reconstruction and reengineering to increase operational efficiency and gratify vital customers.

As a consequence of inadequate capabilities and resources crucial for competitive performance, organizational managers are examining the potential exploitation of suppliers' and customers' resources to generate exceptional value beyond the organizational boundaries of their respective firms. SCM initiatives aim to enhance value by coordinating objectives and combining resources across organizational boundaries [4]. The APICS Dictionary defines supply chain management (SCM) as the systematic approach of designing, planning, executing, controlling, and monitoring supply chain activities with the objective of generating net value, establishing a competitive infrastructure, utilizing global logistics, ensuring supply and demand synchronization, and assessing performance on a global scale. In the context of supply chain management, logistics management is defined by the Council of Supply Chain Management Professionals (CSCMP) as the component that organises, executes, and regulates the forward and reverse flow, as well as the storage of information pertaining to goods, services, and their respective points of origin and consumption, with the objective of satisfying customer demands in an efficient and effective manner.

The proliferation of mobile commerce (m-commerce) applications, e-commerce websites, instant payment systems, and mobile payment systems is expediting the utilization of the internet as a medium for the exchange of goods and services [5]. Lifestyles and dietary patterns have been impacted by this continuous development [6]. This phenomenon has been classified as a nutritional transition or diet transformation by experts [6, 7]. Customers could place orders for food items such as ready-to-eat dishes and fresh produce via e-commerce platforms. Customers and suppliers may include food processors, retailers, and producers, depending on the nature of the transaction [8]. The delivery of products and services has been significantly transformed in recent years due to technological advancements and an increasing demand for convenience, coinciding with the rise in prominence of the concept of delivery system performance. The supper delivery industry has experienced significant growth and development. In response to evolving consumer demands and preferences, food delivery has evolved from conventional take-out establishments to digital platforms and smartphone applications. The advent of the Covid-19 pandemic in 2020 prompted businesses to confront novel and intricate challenges, as it significantly altered consumer purchasing patterns and behaviours (e.g., Belarmino et al., 2021)[9]. New laws, regulations, and recurrent closures have had a significant impact on the operations of restaurants and catering

companies in this regard. In order to mitigate order losses and satisfy customer demands, numerous restaurants and catering companies have opted to update their offerings through the implementation or enhancement of food order delivery services [10-12]. These services encompass not only prepared meals but also retail delivery and the provision of basic materials. Amidst global Covid-19 lockdowns, the majority of catering establishments and restaurants have resorted to online food ordering and delivery services. This has allowed patrons to access food delivery services from the comfort of their own homes through the utilization of online ordering applications (apps) and offline product delivery [13]. Digitalization has facilitated adherence to security regulations by these organizations, which forbid interpersonal contact and mandate the use of electronic transactions and social distancing measures to mitigate the likelihood of contracting Covid-19 [14]. Advancements in technology and the internet revolutionised the supper delivery industry. Patrons have the ability to peruse menus, initiate orders, and monitor the progress of deliveries through digital platforms and mobile applications. As a consequence of this digital transformation, consumer behaviour underwent a profound transformation, as an increasing proportion of people opted for meal delivery services instead of dining out or preparing meals at home.

The preference of consumers is migrating towards mobile applications and online food ordering. As a consequence, there has been a rapid proliferation and growth of meal delivery companies that specialise in providing expedient and convenient delivery solutions. Both Meituan, a well-established Chinese food delivery platform, and Glovo, a prominent player in the food delivery industry in Côte d'Ivoire, have garnered significant momentum in their respective sectors.

In an effort to increase customer contentment in the food delivery industry, companies like Meituan and Glovo are continually refining their delivery processes due to the increased competition. An increasing number of customers value the overall experience, encompassing not only punctual and precise deliveries but also packaging, order accuracy, customer service, and timely delivery. In order to meet these expectations, the efficacy of the delivery system is crucial and has an immediate effect on consumer satisfaction. Practitioners must adapt to "intelligent systems in delivery" in order to resolve business challenges as the delivery environment evolves. It is imperative for nations across the globe to promptly evaluate the efficacy of their delivery systems and respond to market demands in order to maintain client satisfaction and foster domain growth. An intelligent delivery system facilitates the following attributes—awareness, integration, system, and customer—via automated decision support and information management. The prevailing customer satisfaction feedback in Côte D'Ivoire attributes the underdeveloped food delivery system to the company's performance. Consequently, this paper centres on Meituan, a prominent player in the digital and takeaway markets in China, and Glovo, the industry leader in Côte D'Ivoire, which is a reference to this statement. The overarching objective of this comparative study is to provide insights into the optimal approaches and tactics that food delivery enterprises may implement to bolster the efficiency of their delivery systems and elevate customer contentment amid intensifying market competition.

1.1.1 Meituan China

Meituan Dianping, an official designation for the Chinese technology platform Meituan, provides an extensive array of online services such as food delivery, hotel and travel and leisure ticketing, cinema ticketing, and restaurant and hotel reservations. Since its inception in 2010, it has expanded to become one of the most prominent e-commerce platforms in China. Meituan facilitates connections between users and local businesses via its website and mobile application, in addition to offering convenient service options like meal delivery. Meituan, which was founded in March 2010, has been at the forefront of facilitating the digital transformation of the retail sector, from the supply to the demand side. We collaborate with our partners to deliver high-quality services to our clientele. Meituan commenced trading on the Main Board of the Stock Exchange of Hong Kong on September 20, 2018.

Prioritizing consumers at all times, Meituan has increased its R&D expenditures on emerging technologies. Meituan is committed to collaborating with all partners in order to accomplish our social responsibility and generate additional value for society.

1.1.2 Glovo Cote d'Ivoire

Customers can order a variety of products through the delivery platform Glovo Côte d'Ivoire and have them delivered to their doorstep. Customers place orders via a mobile application that provides access to a variety of establishments, including pharmacies, grocery stores, restaurants, and more. Delivery couriers and local businesses collaborate with Glovo Côte d'Ivoire to guarantee timely and effective deliveries. In addition to the products displayed on the app, consumers can request delivery of "Glovo Anything" items through this service. Glovo Côte d'Ivoire endeavors to furnish its clientele in Côte d'Ivoire with dependable and expedient delivery services.

The year 2014 saw the formation of the Spanish startup Glovo in Barcelona. This is an on-demand service that enables the procurement, retrieval, and shipment of all ordered items through the use of a parcel

application and system. This organization was founded in April 2019 in Côte d'Ivoire in response to the persistently high demand for logistics services and package delivery. Therefore, it is imperative to conduct research on the Meituan case, as it is a market leader in the Chinese delivery industry.

1.2 Research questions
This section concerns the main question and the sub questions that will help us to elaborate the hypothesis and guide us identifying the needed information.
* Main question
How do specific aspects of the delivery system performance, such as delivery speed, accuracy, and technology usage, impact customer satisfaction in Meituan and Glovo, and how does the measurable effect of enhancing Glovo's delivery system performance in Côte d'Ivoire compared to Meituan, considering factors like market maturity, customer expectations, and logistical challenges?
* Sub-questions
 1) How do specific aspects of the delivery system performance (like delivery speed, accuracy, and technology usage) impact customer satisfaction in Meituan and Glovo?
This question explores the nuances within the broad concept of delivery system performance, aiming to understand which particular elements (speed, accuracy, technology) are most significant in driving customer satisfaction in different markets. This question directly aligns with Hypothesis 1 and explores the factors mentioned in Hypothesis 3.
2) What measurable effect does enhancing Glovo's delivery system performance have on customer satisfaction levels in Côte d'Ivoire?
This question seeks to examine the causal relationship posited in Hypothesis 2 by looking at before and after scenarios or through longitudinal studies that measure changes in customer satisfaction as Glovo's delivery performance improves. It aims to quantify the degree to which improvements in the delivery system influence customer perceptions and satisfaction.
3) How does the impact of delivery system performance on customer satisfaction compare between Meituan and Glovo, and what are the contributing factors for any observed differences?
Addressing Hypothesis 4, this question investigates whether the impact of delivery system performance on customer satisfaction is significantly different between Meituan and Glovo. It also explores underlying factors, such as market maturity, customer expectations, and logistical challenges, which might contribute to these differences.

1.3 Research Purpose and Significance
1.3.1 Purpose
      In order to gain a better understanding of how both companies manage customer expectations and affect overall satisfaction, the objective of this research is to compare the delivery system performance of Meituan in China and Glovo in Côte d'Ivoire. By analysing and comparing their delivery methods, including pricing, delivery speed, accuracy, communication, and customer support, this research endeavours to identify the strengths and weaknesses of each company's strategy and its impact on customer satisfaction.

1.3.2 Significance
      The subject matter at hand is of considerable importance due to the increasing global prominence of food delivery services, specifically in the aftermath of the COVID-19 pandemic. With the increasing dependence of consumers on food delivery platforms to obtain meals conveniently from their residences, it becomes imperative to assess the delivery system's efficacy in guaranteeing customer contentment.
      Through an examination of Meituan in China, a prominent and developed food delivery platform, and Glovo in Côte d'Ivoire, a developing country, this study seeks to identify possible disparities in the performance of delivery systems and the resultant influence on levels of customer satisfaction.
      The results that we will obtain from this comparative study will have the potential to offer significant insights and suggestions to organisations as well as the food delivery sector as a whole. By identifying their areas of strength, Meituan has the potential to offer Glovo valuable guidance on how to improve the operations of their delivery system. In addition, other food delivery companies may be able to gain insights from the research findings regarding optimal strategies for enhancing their operations and, ultimately, boosting consumer satisfaction. In general, this type of research aids in the advancement and enhancement of food delivery services, which ultimately benefits both consumers and the food delivery sector at large.

1.4 Research Content and Research methods
1.4.1 Research Content
This study employs empirical research to examine the relationship between customer satisfaction and delivery system efficacy for Meituan in Côte d'Ivoire and Glovo in Côte d'Ivoire. Included in the research content are:

The first chapter is the introduction. This chapter provides an overview of the background information, including a concise overview of Meituan in China and Glovo in Côte d'Ivoire, the purpose and significance of the research, a statement of the problem and specific objectives, the research content, and the methodologies employed.

Chapter 2 is Relevant theoretical basis and literature review. In this part we explore the related theoretical basis for supply chain distribution system performance and customer satisfaction. we review the literature about company distribution system, performance measurement (Key Performance Indicators), customer satisfaction.

Chapter 3 is about the research model, framework based on the theorical foundation of chapter 2 combined with our designated variables, the delivery system and hypothesis. In the same chapter we will also design two questionnaires to collect data in China and Côte d'Ivoire based on the scale of other scholars and adapted to the reality of our research.

Chapter 4 is related to data analysis and results, here we will focus on the impact of Meituan's & Glovo delivery system performance on customer satisfaction and the compare the result. Firstly use the software to conduct demographic and descriptive analysis of the questionnaire sample data. We will get the percentages of the KPI from the variables that impact the customer satisfaction and the 4 variables that impact the delivery performance apply the formula through excel to benchmark them and we will run futher analysis by SmartPLS especially applying Structural Equation Modeling.

Chapter 5 is research conclusions and prospects, we will summarize the results and findings then we will do the data verification results, and propose some suggestions from perspective of improving the delivery system performance of Glovo and suggestion to upgrade and invest in the R&D department of Meituan in China for more innovation. Finally, the shortcoming and limitations of the research will be pointed out, and future prospects will propose for the scholars.

1.4.2 Research Method
Through an examination of the literature on Food Delivery System Performance, the research indicates that factors such as order ease, delivery time, order quantity, location, tracking, convenience, refunds, problems, and price may influence customer satisfaction and customer service. Additionally, navigation speed, technology security, and recommendations may also impact performance. Utilizing the context theory, we developed a framework, conducted a questionnaire survey, and devised an analytical approach to derive pertinent results from this study. The primary research methodologies used were as follows:

(1) Literature review method: Utilising databases such as sciencedirect.com, Elsevier, and relevant theses, this study conducted a search and analysis of papers on Delivery System Performance, Supply Chain, Logistics, E-commerce, and Customer Satisfaction. The purpose was to find theoretical support for the research and establish the framework used in this paper.

(2) Online questionnaire survey: This publication utilises a questionnaire survey approach to gather data on satisfaction levels and to evaluate firms based on their experience using certain characteristics we have identified. Initially, we will distribute 500 surveys in China about Meituan and 500 questions in Cote d'Ivoire to Glovo. Data collection will be performed on users and a sample of the population, and data analysis will be undertaken to enhance the accuracy of the survey findings. The analysis will be conducted using qualitative methods.

(3) Statistical analysis method: This study will primarily use the variables to assess the present performance using SMART PLS for analysing the sample data collected from the questionnaire. The use of smart pls is employed for the purpose of doing Smart Equation Modelling and Regression in order to assess the validity and reliability of the measure, as well as the link between constructs. By doing this study, we may discover useful insights into the factors that influence the company's success. For example, it is possible to discover that customer happiness has a substantial and beneficial influence on both operational efficiency and successful communication. In addition, it is possible to ascertain that the quality of service has an indirect impact on customer satisfaction via the means of effective communication.

By using the structural model framework in Smart PLS, we may get a thorough comprehension of the aspects that impact the operation of a delivery firm. This research allows managers to pinpoint areas in need of improvement, formulate plans to boost performance, and make data-driven choices to maintain competitiveness in the market.

1.4.3 Research model
This research is empirical research, and the specific research model is shown in the following figure:
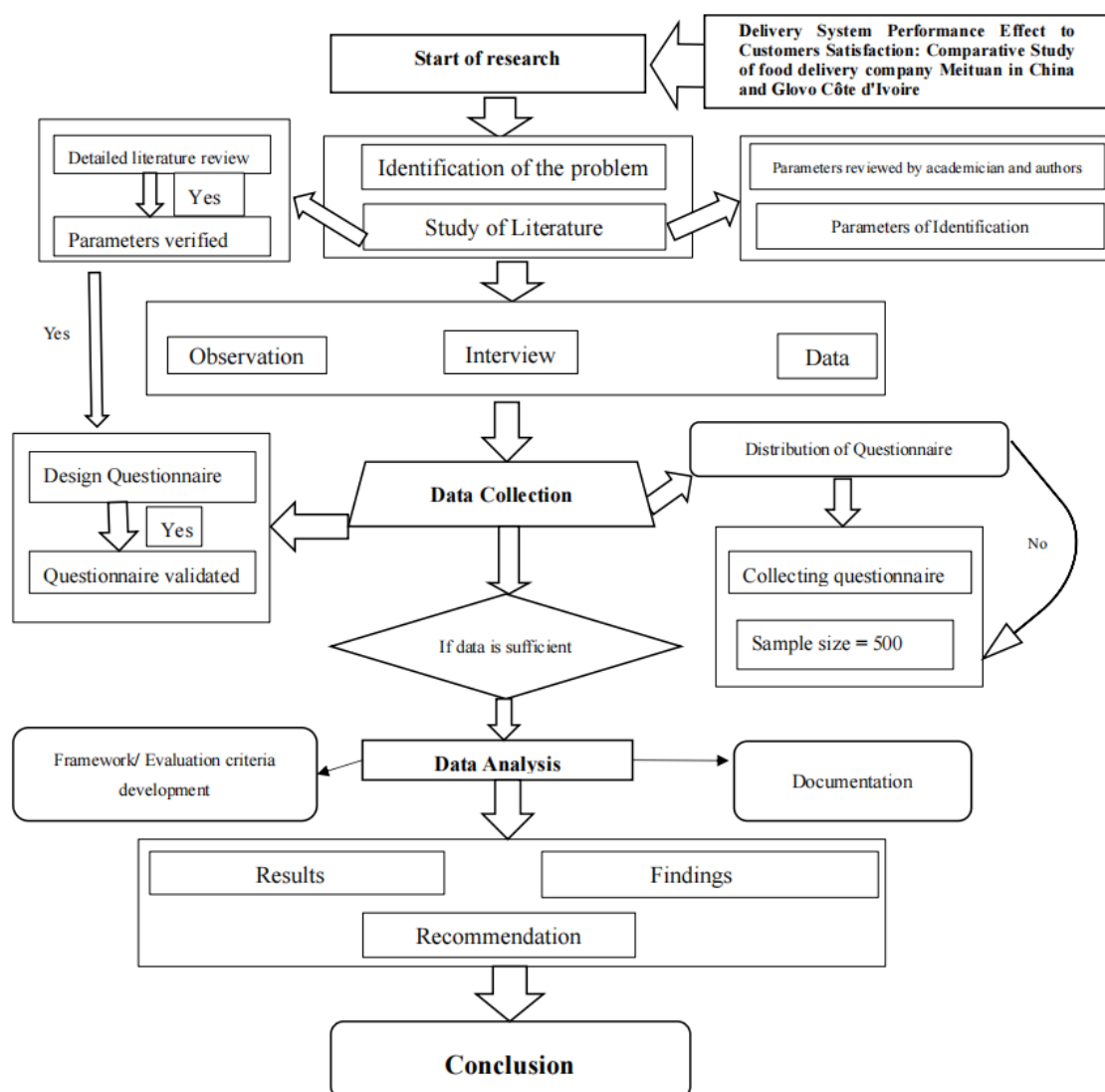
Figure 1.1 Technical route

1.5 Contribution Points

The innovation points of the comparative study on delivery system performance and customer satisfaction for Meituan in China and Glovo in Côte d'Ivoire involves delving deeper into the dynamics of each component:

1. Delivery System Performance

The primary innovation in this research lies in its focused analysis of the delivery system's performance as a critical determinant of customer satisfaction. This approach not only provides insight into the operational efficiency of Meituan and Glovo but also emphasizes the direct impact of delivery logistics on consumer perception. By examining factors such as delivery speed, accuracy, and the condition of delivered items, the study can pinpoint which aspects most significantly affect customer satisfaction. This evaluation will involve a detailed examination of logistics frameworks, technological integration, and the efficiency of the on time delivery that connects services to consumers. The innovative use of data analytics to parse out these variables will enable a clear understanding of their respective weights in influencing satisfaction levels.

2. Comparative Analysis of Two Distinct Markets

The comparative study of Meituan and Glovo operates under the premise that different regional markets have unique challenges and customer expectations. Meituan, a dominant player in the densely populated urban landscapes of China, offers a contrasting backdrop to Glovo's operations in Côte d'Ivoire, which may deal with different infrastructural and logistical challenges. This comparison not only enriches the understanding of geographical impact on delivery efficiency but also highlights the adaptability and strategic differences between

the two companies. By exploring these differences, the research provides valuable insights into how companies can optimize their delivery systems in varying market conditions to enhance customer satisfaction.

3.Customer Satisfaction AssessmentCustomer satisfaction stands as the ultimate measure of a company's delivery system effectiveness. This study utilizes Structural Equation Modeling (SEM) and regression analysis to dissect the layers of customer satisfaction, from initial order placement to post-delivery feedback. The innovative use of SEM with Confirmatory Factor Analysis (CFA) in this context allows for a sophisticated exploration of latent variables that influence customer perceptions and satisfaction. This approach not only assesses direct impacts but also explores the subtle, indirect effects that delivery performance might have on overall customer loyalty and retention. The incorporation of regression techniques further aids in understanding the strength and nature of these relationships, providing a robust statistical foundation to support the findings.

4. Methodological Rigor Using Smart PLS

Employing Smart PLS for Structural Equation Modeling introduces an advanced level of methodological rigor, capable of handling complex models and large datasets typical of companies like Meituan and Glovo. The use of Smart PLS enhances the research's ability to accurately assess the effectiveness of different delivery methods and their direct or indirect relationships with customer satisfaction. The methodological innovation lies in its capacity to handle both one-factor and multi-factor models, allowing for a nuanced analysis of how various elements of the delivery process interact to impact customer satisfaction.

5.Strategic Implications and Practical Applications

The outcomes of this research are intended not only to contribute to academic literature but also to provide actionable insights for the involved companies. By understanding the drivers of customer satisfaction, Meituan and Glovo can strategically enhance their operational practices, improve customer engagement strategies, and potentially innovate new delivery solutions tailored to the specific needs of their markets. The practical application of this research could lead to improved customer experiences, higher satisfaction rates, and ultimately, greater market share in their respective regions.

II.   Relevant theoretical basis and literature

This chapter examines the theoretical foundation, ideas about the performance of supply chain delivery systems, and theories connected to customer satisfaction in the context of a comparative study between two food delivery companies: Meituan in China and Glovo in Côte d'Ivoire. Comprehending the correlation between the performance of the delivery system and client satisfaction is essential for these organizations to enhance their services and get a competitive advantage in the market. This review aims to provide a thorough and inclusive analysis of the relevant literature, using in-text citations to substantiate the debate.

2.1 Related theoretical basis

2.1.1 Theories related to supply chain delivery system performance.

a) Performance Measurement: Performance measurement involves assessing several facets of supply chain performance. Key performance indicators (KPIs) are used to oversee and evaluate the efficacy and productivity of supply chain activities. Two prominent performance evaluation frameworks include the Balanced Scorecard, developed by Kaplan and Norton (1996)[15], and the Supply Chain Operations Reference (SCOR) model, established by the Supply Chain Council in 2011.

b) Lean Thinking: Lean thinking is a concept that centres around the eradication of unnecessary elements and the enhancement of effectiveness in supply chain procedures. The text highlights the significance of ongoing enhancement, minimising waste, and generating value for consumers. Implementing lean concepts, such as just-in-time (JIT) inventory management and continuous flow, may improve the effectiveness of delivery systems and increase customer satisfaction [16].

c) Technology and automation are crucial factors in determining the success of supply chain distribution systems. Technologies such as GPS tracking, route optimisation software, and real-time tracking systems provide efficient order fulfilment, precise delivery estimations, and enhanced transparency. The use of automation in warehouse operations and last-mile delivery procedures may greatly improve the efficiency and effectiveness   of   delivery   performance   [17].

2.1.1 Customer satisfaction related theories

a) Service Quality: Service quality is a crucial factor in determining customer happiness. The SERVQUAL model, created by [18], delineates five distinct characteristics of service quality: dependability, responsiveness, assurance, empathy, and tangibles. By meeting or beyond consumer expectations in these aspects, it may have a good effect on customer satisfaction.

b) Expectation-Confirmation Theory: According to the Expectation-Confirmation Theory, customer happiness is determined by whether their original expectations about the service are confirmed or contradicted. When the delivery system performs at a level that matches or above consumer expectations, it results in positive confirmation and improves customer satisfaction [19].

c) Relationship Marketing: Relationship marketing is a strategy that emphasises the development of enduring connections with consumers via personalised interactions, trust, and the production of mutual value. Establishing robust customer connections may have a beneficial effect on customer happiness, loyalty, and advocacy. The efficacy of the delivery system is essential for creating and sustaining these partnerships [20].

d) The Expectancy-Disconfirmation Theory posits that customer satisfaction is determined by the contrast between consumers' expectations and their perceived performance or received service. When the performance of the delivery system surpasses consumers' expectations, it results in positive disconfirmation and increased levels of satisfaction. In contrast, if the performance does not meet expectations, it might lead to negative disconfirmation and decreased satisfaction.

In order to conduct a thorough comparative analysis of Meituan in China and Glovo in Côte d'Ivoire, it is vital to have a comprehensive comprehension of the framework and associated theories pertaining to delivery system performance and customer satisfaction. Theoretical frameworks that have been examined in the food delivery industry, including service quality theory, technology acceptance model, resource-based view, lean Six Sigma, expectancy-disconfirmation theory, and customer-based brand equity, establish a robust groundwork for examining the influence of delivery system performance on customer satisfaction. By implementing these theoretical frameworks, scholars can acquire significant knowledge regarding the determinants that impact customer satisfaction and provide pertinent suggestions for enhancing the delivery infrastructures of Meituan and Glovo.

2.2 Literature Review

This chapter will analyze the conclusions drawn by numerous academicians and authors regarding the performance of the delivery system and the contentment of customers. The chapter examines the Benchmark, which measures the performance of Meituan in China and Glovo in Cote d'Ivoire using Key Performance Indicators. It also explores how these platforms operate in order to develop and implement the model in Cote d'Ivoire. In general, the objective of this assessment is to examine the various facets of performance measurement as they pertain to food delivery industry delivery systems.

2.2.1 Overview of delivery systems in the food delivery industry

The food delivery sector has experienced substantial expansion due to a multitude of factors, including technological advancements, shifts in consumer preferences, and the allure of convenience. The establishment of a streamlined and productive delivery infrastructure has emerged as a critical enterprise objective within this sector. Online food delivery (OFD) pertains to the digital platform through which consumers place orders for food from fast-food establishments and restaurants [21]. The OFD system provides consumers with an expanded selection of dining establishments and culinary products [22]. Restaurants and fast-food establishments can efficiently expand their consumer base and reduce expenses by implementing OFD, while patrons can conveniently place orders for their preferred meals with minimal exertion [23].

In the recent past, OFD has seen several advances in technology. For example, restaurants have moved from offline orders to online orders by developing their websites, allowing customers to order food through the restaurant's website. [24]. Additionally, with the growing use of smartphone applications, restaurants have developed their own apps that also function as online food ordering platforms for consumers [23]. Nevertheless, not all dining establishments utilize their proprietary food delivery channels for operational and/or financial reasons [25].

As a result, dining establishments utilize food aggregators and third-party platforms to streamline the process of online food delivery, thereby expanding their market presence economically [26]. Heing (2020)[27] lists Meituan, Glovo Jumia Food, Eleme, Foodpanda, Swiggy, Zomato, and Uber Eats as third-party food delivery platforms. Nevertheless, these platforms, which are third-party food delivery services, are typically restricted to major metropolitan areas. In order to enhance the reach of OFD services across different regions, restaurants have implemented drone and AI-powered food delivery channels, which are an additional type of OFD [28].

Online food delivery (OFD) establishes connections between consumers and offline catering establishments through the utilization of digital information platforms and the Internet. By integrating this user-demand-oriented service with takeaway resource integration, a wealth of food-ordering information and

convenient food delivery services are made available to consumers. By implementing this innovative business model further, catering companies could provide clients with exclusive marketing and sales channels via digital food delivery and online ordering. Conventional dining is inevitably transformed by the advent of online food delivery platforms that permit food orders to be placed regardless of time or location. This feature allows individuals to easily meet their fundamental necessities despite their busy schedules. As of December 2022, the online food delivery user base in China had grown by 102 million from December 2020 to December 2022, representing 48.8% of the total internet user population [29]. In general, the growth of the online food delivery industry, competitive and dynamic environments, and advancements in technological applications for delivery have all contributed to the acceleration of the development of online takeaway platforms. A greater comprehension is necessary, nevertheless, regarding the formulation of consumer satisfaction with online food delivery services and the factors that may influence their continued use.

The competitiveness of the online food delivery sector is significantly influenced by service quality, given that this industry primarily provides supper delivery services to consumers. The prominence of online food delivery service quality has increased due to the proliferation of digital food delivery platforms and the rapid expansion of the industry. Therefore, the service quality that was previously given little attention is a critical determinant in influencing customer satisfaction and the likelihood of reusing OFD applications. Consideration should be given to the critical determinants of the quality of online food delivery services in order to satisfy customers and gain a competitive organizational advantage for the benefit of both businesses and customers.

Certain individuals may encounter challenges in accomplishing mundane responsibilities such as purchasing groceries or preparing an evening meal, despite residing in a dynamic society. Thankfully, these duties can now be completed with a few touches on mobile devices. Due to on-demand services, they have adopted smartphones as a means to secure doorstep delivery of any item they desire. Indeed, the delivery industry is being transformed by digital technology [30].

The industry of culinary service is not an exception. The food delivery industry is being disrupted by on-demand food delivery applications.

Food delivery applications make it possible for customers to place orders at a variety of restaurants, enabling them to compare menus, prices, and user reviews quickly and easily. In fact, prior research has demonstrated that consumers prefer online services due to their convenience, speed, and accuracy [31, 32]. Additionally, customers continue to request more expedient ordering and delivery processes. Consumers are undoubtedly motivated to strengthen their relationships with service platforms by the desire for convenience [33, 34]. It is not remarkable that millennials, the consumer demographic that utilizes online services the most, have the highest preference for these food delivery services ("Online On-demand Food Delivery Services Market – Growth Analysis and Forecast Technavio [35].

Numerous scholars have examined consumer behavior and preferences in the online realm throughout the years; nevertheless, the influence of food delivery on customer satisfaction remains an area that requires further investigation. Consequently, it is critical to comprehend the fundamental incentives that drive consumers to utilize these applications, in addition to the functionalities that they deem most significant. These attributes may be tangible or ethereal, such as the design of the application or the quality and convenience of the service. Additionally, there are a number of factors that discourage individuals from engaging in online purchasing. With regard to this service, no prior research has examined these factors; thus, this study will assess the primary obstacles and concerns of individuals who refrain from utilizing mobile applications to place food orders.

The proliferation of Internet technologies and the ongoing expansion of the sharing economy [36] provided a ripe environment for the formation of novel and inventive enterprises. Numerous enterprises effectively facilitated the exchange of goods and services by connecting diverse user groups via digital platforms that were thoughtfully crafted [37-39].

This pertains to digital platforms for online food delivery, which are responsible for receiving orders and payments from consumers before allocating meal orders to restaurants. Restaurants prepare the food and dispatch the order via internal or external couriers (often messengers) in accordance with the information flows in question. In addition to these "two-sided platforms," food delivery to the eventual consumer is also managed by multisided platforms. Digital food delivery platforms are typically distinguished by their minimal capital investments, capacity for rapid global expansion and scalability, and low transaction costs [40, 41]. On the contrary, the value that a critical platform attribute generates for a solitary user is contingent upon the platform's extensive user base [42, 43]. Direct and indirect network effects have an impact on the platform user's dynamic [44]. When "the benefits of network participation to a user depend on the number of other network users"[44], direct network effects manifest, thereby increasing the market visibility and appeal of the platform to potential users. On the contrary, indirect network effects occur when the expansion of users on one side of the platform enhances its value, consequently drawing in users from the other side [45, 46]. When considering the aforementioned phenomena in the context of online food delivery platforms, it is observed that direct network effects result in an increase in the number of affiliated restaurants and customers due to the growth of the same user group.

Conversely, indirect network effects stimulate the expansion of restaurants by leveraging the increasing number of active customers on the platform, who belong to the other user group. An additional obstacle that platforms might encounter, especially during their nascent stages, is the "chicken-and-egg" dilemma [45, 46]. In order to surmount this challenging phase, platforms must continue to entice users until a significant portion of their user base departs. Marketing strategies frequently employed by online food delivery platforms include providing discounts, coupons, promotion codes, and complimentary food delivery to a specific user segment typically end-customers in order to increase the number of orders placed by customers [47-49]. Network scale becomes a competitive advantage for a platform once it has acquired a significant user base [38]. The urgency then changes to securing a greater number of users than rivals. A digital platform that achieves this objective is expected to attract new subscribers and increase the platform's value for each user due to its substantial user base. Additionally, the dominant firm may gain a first-mover advantage due to the presence of robust network effects. Such a situation may lead to a winner-takes-all situation, where the platform amassing the largest user base eliminates its competitors from the competitive sphere [46]. Digital platforms may also opt to replicate their business model across multiple countries in order to operate internationally. Nevertheless, platform administrators may occasionally exaggerate the prospective advantages that can be derived from the substantial magnitude of users' networks [50, 51]. According to Stallkamp and Schotter (2021)[40], the impact of physical distance and national borders on the network effects encountered by platforms is discussed. These comments hold significant relevance in the context of digital food delivery platforms, where the urgency to promptly deliver freshly prepared dishes to customers is paramount. According to the authors, "the network advantage that a platform firm enjoys from its existing user base in its home country is not transferable to other countries" in this context, thus undermining the advantages of scaling globally. As "the attractiveness of the platform depends on its local user network" rather than the scale of its global user network, they further assert that platforms must swiftly amass a larger user base than competitors in the target market. Hence, it is imperative that digital food delivery platforms independently address the intricate "chicken-and-egg" phenomenon in every foreign nation.

Platforms often compete fiercely to become the top player in their market. While this approach might lead to financial losses in the short term, it's crucial for a platform to quickly attract a significant number of users. If a competitor grows faster, the new platform risks falling behind in a winner-takes-all scenario, which could lead to its failure and exit from the market.
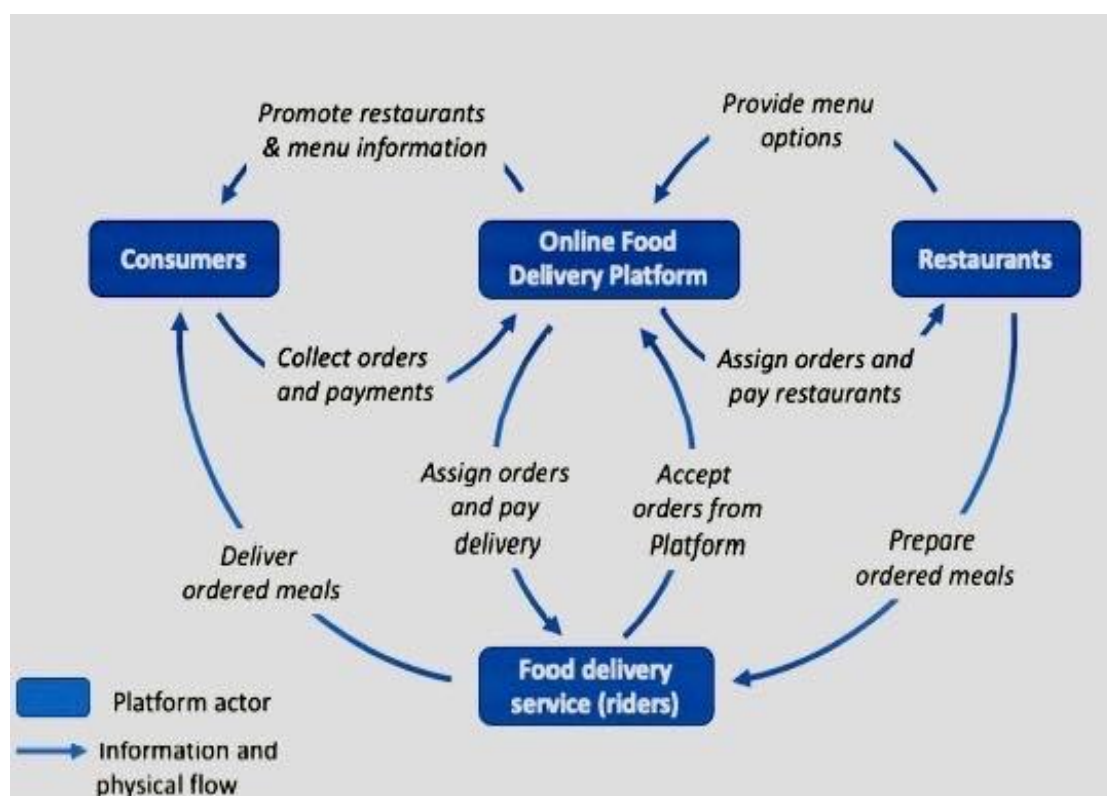

Figure2.1 Conceptual online food delivery platform ecosystem

Source: [48]

Therefore, all the mentioned platforms, including online food delivery (OFD), online to offline delivery, mobile app-based food delivery, and drone-based food delivery, fall under the category of OFD services. This categorization brought us to the delivery system model.

2.2.2 Delivery System model

Effective management of fast delivery systems necessitates the resolution of decision problems, including those represented by dynamic vehicle routing problems and fast delivery. An exhaustive review of the literature pertaining to this category of optimisation problems and decision models can be located in the works of Pillac et al. (2013)[52] and Psaraftis et al. (2016)[53]. Moreover, the allocation of couriers to meet the demands of expedited delivery can be categorised within the dynamic pickup and delivery problem sub-class. This sub-class has garnered significant scholarly interest in recent years, primarily due to the advent of ride-hailing applications, e-commerce, same-day delivery services, and e-commerce [54-57]. Numerous food delivery mobile applications and websites share a number of crucial characteristics that confound their problem-solving processes, including strict service constraints and limited knowledge of future events (e.g., request placements and decision urgency). However, despite these complexities, practitioners and researchers have been encouraged to adopt rolling horizon algorithms based on myopic matching due to their scalability and ability to generate high-quality solutions, particularly in the domain of crowd-sourced transport applications [58-61].

Numerous authors have investigated this category of issues from both a theoretical and practical perspective, inspired by these technological advancements in application development [55, 59, 62-65]. With regard to the performance of delivery applications, seminal research includes that of Reyes et al., (2018)[63], which formally introduces the food delivery routing problem and highlights the most critical aspects of a delivery company, with a particular focus on the performance of meal delivery. In order to address the dynamic nature of the issue at hand, the authors suggest a Key Performance Indicator-based framework for evaluating performance and assessing its influence on customer satisfaction. Nevertheless, our research will present a non-exhaustive model derived from Meituan's model in China. This model will be influenced by numerous operational factors, such as the dispatching technology's complexity, the level of bundling, the policy regarding assignment commitment, and particular algorithmic characteristics. A concurrent research endeavour [66] seeks to resolve the static version in order to ascertain the significance of possessing comprehensive information regarding order arrivals. In order to identify the optimal solution amidst the problem's extreme complexity, they devise a framework that generates rows and columns concurrently. By resolving a subset of instances from [63], both groups of authors conclude that a myopic rolling horizon approach can, on average, identify solutions with service quality that are close to optimal.

On a separate note, a study conducted by Liu (2019)[67] examines the efficacy of food delivery systems when drones replace couriers. The research considers various context-specific constraints, including order type, drone carrying capacity, and drone battery capacity.

The proposed dynamic courier region expansion scheme is a method for addressing the dynamic delivery resource allocation problem with some degree of flexibility. While there has been limited research on the application of partial flexibility in resource allocation to the performance of delivery systems in Côte d'Ivoire, this concept has been extensively examined in other sectors, including manufacturing, worldwide.

2.2.3 On demand food delivery apps

At present, individuals selecting to place food orders online have access to two primary categories of online platforms, excluding the websites of individual restaurants. Therefore, it is essential to comprehend the distinctions between "aggregators" and the more contemporary food delivery applications. Adopting a more conventional approach, the aggregators exclusively receive consumer orders, with the restaurant responsible for handling the delivery process. This conventional method does not impose any further expenses on consumers. In contrast, the novel food delivery applications, which shall constitute the subject of this study, handle the delivery process internally and charge patrons and restaurants for their services. Food delivery applications function as an intermediary, linking individuals with food establishments [68, 69]. These platforms enable users to place orders for various dishes from associate restaurants, which were previously unable to provide delivery services. Consequently, dining establishments desiring to commence providing delivery services may opt to form alliances with third-party delivery platforms, thereby augmenting the assortment of dining options accessible to patrons.

According to the Statista (2024)[5] Market Forecast, the worldwide market for platform-to-consumer food delivery in the online food delivery sector is valued at $17.3413 million. Furthermore, the global user penetration rate has attained 6% and is projected to surge to 10.3% within the next five years. The industry has been dominated by China, which has amassed a market volume of $12.078 million. The United States, the United Kingdom, and India have followed suit. Nevertheless, Hong Kong is in the lead in terms of user penetration, with Canada, China, and The Netherlands following suit.

Global market leaders in food delivery applications include GrubHub, Delivery Hero, Deliveroo, Just Eat, DoorDash, and Uber Eats. When major players began to enter the delivery market, competition in this sector

intensified: Amazon introduced Prime Now, a restaurant delivery service; and McDonald's formed a partnership with Uber Eats.

Moreover, these platforms derive their revenue from distinct sources. As an illustration, DoorDash does not impose a fixed fee; rather, the restaurant is billed a revenue-share that fluctuates between 10% and 25%, as determined by the company. Uber Eats remunerates its restaurant partners through two distinct mechanisms: firstly, a marketing fee (nonfixed), which is discretionary and grants restaurants the opportunity to rank at the forefront of their app search results; and secondly, a fixed revenue-share of 30% on each order. While not all food delivery applications provide opportunities for marketing with their restaurant partners, the vast majority do. Moreover, the pricing structures for delivery services vary among these applications. Once more, certain establishments impose a variable fee contingent upon the consumer's location, in contrast to the fee charged by the restaurant.

The Platform-to-Consumer Food Delivery market in Côte d'Ivoire generated $3 million in revenue in 2018, with a 0.8% user penetration rate; this figure is anticipated to increase by more than Jumia, Glovo, and Yanzo deli are the only widely recognised food delivery applications in Côte d'Ivoire. With the exception of this individual, Cote d'Ivoire is replete with informal deliverymen [5].

The informal delivery company specialises exclusively in food delivery from their partner restaurants. In contrast, Glovo and Yango deli offer customers the opportunity to order fashion items, pharmaceuticals and anything else that can fit in the package transported on the driver's motorcycle. An informal enterprise provides customers with the option to have their purchases delivered from an Ivorian supermarket. In respect of charges imposed on customers by non-formal delivery companies, a fixed fee of $3.17, $3.23, and $3.94 is applicable. Glovo and Yango delis, on the other hand, impose variable fees beginning at $2.08 and $2.19, respectively. Lastly, certain applications enable users to track the delivery person's progress and receive real-time updates. In the context of China, Meituan holds the market leadership position, boasting over 680 million annual user transactions.

2.2.4 Quality of mobile service

Given that this research investigates the impact of a mobile application-based delivery system on customer satisfaction as it relates to the service quality of online food delivery (as measured by customer satisfaction with online food delivery and mobile service quality), it is essential to assess the development of mobile service quality in the literature. Conducting a literature review on the ever-developing field of electronic and mobile service quality, the subsequent section commences with a comprehensive outline of the primary service quality model.

Extensive scholarly investigation has been devoted to the literature concerning service quality [70-72]. The SERVQUAL framework, which Parasuraman instrumental in developing, established the following dimensions of service quality: "Tangibles, Reliability, Responsiveness, Assurance, and Empathy"[73]. Furthermore, it has been argued by Parasuraman et al. (1985)[74] that the assessment of service quality throughout the entire purchasing and delivery process is contingent upon consumer perceptions. This is known as the gap model, and it involves comparing the service as perceived by the consumer to their initial expectations. However, according to Kuo et al. (2009)[75], the assessment of perceived service quality differs across industries. Consequently, it is possible that the current service quality scale lacks generalizability when applied to electronic service quality.

As stated by Parasuraman et al. (2005)[76], the transition from offline to online service delivery led to the establishment of an Electronic Service Quality standard for evaluating the quality of service provided through websites. In addition, the preliminary E-S-QUAL comprises "22" items that are categorized into the following four groups: efficiency, fulfillment, system availability, and privacy. Additionally, in the same study, the authors created the e-recovery scale, which comprised eleven items organized along the following three dimensions: Contact, Compensation, and Responsiveness. Therefore, although m-commerce is often perceived as an extension of e-commerce, the current electronic services may lack sufficient quality. The development of precise metrics to evaluate the quality of mobile commerce services is imperative due to its distinct attributes.

A multitude of academics have put forth and developed a multitude of criteria for operationalizing the quality of mobile services. The perceived quality of m-services is contingent upon the nature of the interaction, the surrounding environment, and the result, as stated by Liu (2019)[67]. Furthermore, according to [75], the assessment of these factors involves the utilization of sub-dimensions within each dimension. For instance, "outcome quality" is determined by assets, design, environmental punctuality, apparatus, expertise, problem-solving, and information, while "outcome quality" is determined by valence and tangibles. Lin et al. (2016)[77] provides a variety of dimensions for evaluating the efficacy of mobile services. They support the integration of interface design, customer service, functionality, and content. In addition, the mobile service quality dimension, which includes five dimensions for virtual products (contact, responsiveness, fulfillment, privacy, and efficiency) and four dimensions for physical products (contact, responsiveness, fulfillment, and efficiency), is introduced by Huang et al. (2015)[78] in order to quantify the quality of mobile services that include both physical and virtual products.

2.2.5 Performance measurement of food company delivery system

Performance measurement is a critical component in assessing and enhancing the overall effectiveness, precision, and contentment of customers with delivery systems. The significance of dispatch performance measurement is emphasized in [79], which highlights the need for real-time monitoring, on-time delivery, and additional service quality metrics [80]. A framework is put forth by the authors to assess delivery performance, which considers internal (operational) and external (customer-centric) performance indicators. Stewart (1995)[81] posits that an enhancement in delivery performance can be achieved by decreasing lead-time attributes. Timely delivery is an additional critical element of delivery performance.

In addition to indicating whether or not a flawless delivery has occurred, on-time delivery serves as an indicator of the quality of customer service. The notion of "on time order fill," which Silvera (2017)[82], defined as a synthesis of order completeness and delivery dependability, is comparable [83]. The percentage of completed products in transit is an additional facet of delivery; a high value indicates insufficient inventory turnover, which can result in unwarranted accumulations of tied-up capital. There are numerous determinants that can exert an impact on the velocity of deliveries, encompassing depot locations, the frequency of deliveries, and the dependability of drivers. Inventory levels may decline in tandem with an increase in efficacy in the aforementioned areas. Number of certified immaculate notes: The delivery date, time, and condition in which the products were received are detailed on the invoice. Through a comparison of these with the mutually agreed-upon terms, it is possible to ascertain whether or not delivery has been executed flawlessly, as well as to identify any inconsistencies that may require rectification. The flexibility of delivery systems to accommodate specific customer requirements pertains to the ability to fulfil a particular customer's dispatch request at a predetermined location, via a predetermined mode of transport, and with customized packaging as agreed upon. The degree of flexibility in question has the potential to impact customers' purchasing decisions, and is therefore a crucial factor in attracting and retaining clients [84].

Researching the theoretical foundation of performance measurement and management, Bititci et al. (2018)[85], remarked that the literature has evolved through performance measurement (what to measure) to performance management (how to use measures to manage organizations' performance). These two dimensions, however, as reported in the work of [86], are indeed interrelated and complementary.

While it is generally acknowledged that performance management systems improve organizational outcomes in terms of efficiency and effectiveness [87, 88], numerous authors disagree [85, 89-92] regarding the necessity to further develop knowledge regarding performance measurement management in environments characterized by rapid change and stress. Analogously, the urgency for empirical research in intricate digital economies, such as online food delivery platforms, was emphasized by Nudurupati et al. (2016)[93].

Prior research has made limited progress in addressing the lack of knowledge regarding digital firms [94]. Nudurupati et al. (2016)[93] made a valuable contribution by providing fresh perspectives on the renovation of performance models and practices to enhance resilience, specifically in the context of digital economies. The authors emphasized the importance of expanding performance measures to encompass the diverse array of stakeholders engaged in a firm's network. The diffusion of rating measures within the performance system of a major e-commerce platform, such as Amazon, was examined by [94], Jeacle [95], [96, 97]. While acknowledging the significance of efficient performance management in digital organizations, each of these works fails to adopt a systemic and dynamic viewpoint, which would have exposed numerous shortcomings [94, 96, 97]. According to Arnaboldi et al. (2017)[98], performance evaluations in digital companies are typically preoccupied with profit-driven intricate financial analyses and measurement.

Building upon the aforementioned observations and the emerging research void, the objective of this study is to make a scholarly contribution to the literature on customer satisfaction and performance systems by enhancing our comprehension of the influence of performance systems on customer satisfaction. This will be achieved through an in-depth analysis of this situation from the user's perspective, utilizing our Key Performance Indicator.

2.2.6 Benchmark in online food delivery system

Benchmarking has been implemented across diverse sectors, industries, and disciplines, including supply chain management [84]. Its applications encompass the subsequent: To benchmark the capabilities of an organization's processes, technologies, and delivery operations [99]. To assess the efficacy of delivery. For internal supply chain performance benchmarking [100]. In order to assess inter-organizational collaboration within the supply chain [101]. Additionally, benchmarking is a prevalent topic of scholarly investigation, having generated countless publications that are succinctly summarized in the literature reviews authored by Yasin (2002)[102] and Dattakumar and Jagadeesh (2003)[103].

Key Performance Indicators, Balanced Scorecard, and Cross and Lynch's Strategic Measurement Analysis and Reporting Technique (S.M.A.R.T) are a few examples of the numerous varieties of performance measurement instruments[104]. In this instance, we will utilize latent variables via Performance Indicators, which are one of the instruments utilized to assess the performance metrics of Glovo CI and Meituan China. An

established culture of performance measurement is a contributing factor to the achievement of organizations in adopting lean manufacturing[105]. Bartolini and Silvi (2011)[106] provided the definition of KPIs as compliance or performance indicators.

Table2.1 Previous literature on Supply Chain performance

No	Author (year)	Title	Previous research result
1	Lehyani et al. (2021)[107]	Defining and Measuring Supply Chain Performance: A Systematic Literature Review	This review investigates and explores the overview of the existing methods used for supply chain performance measurement.
2	Kamble and Gunasekaran (2020)[108]	Big data-driven supply chain performance measurement system: a review and framework for implementation	This reviews tends to identify varies performance measurement systems which are relevant to big data driven supply chain performance.
3	Banomyong et al. (2019)[109]	A systematic review of humanitarian operations, humanitarian logistics and humanitarian supply chain performance literature: 2005 to 2016	This review explains the effective methodologies for conducting comprehensive state of the art review through humanitarian supply chain as a case.
4	(Lima-Junior & Carpinetti, 2017)[110]	Quantitative models for supply chain performance evaluation: A literature review	This review deals with the exploration of different existing models for supply chain performance measurement.
5	Maestrini et al. (2017)[111]	Supply chain performance measurement systems: A systematic review and research agenda.	The review deals with SC performance measurements in relation to resources, output, and flexibility.
6	Balfaqih et al. (2016)[112]	Review of supply chain performance measurement systems: 1998–2015	The review deals with the existing studies on different supply chain performance measurement system published within 1998–2015.
7	Gunasekaran et al. (2015)[113]	Performance measures and metrics in outsourcing decisions: A review for research and applications	The review deals with financial and non-financial SC performance measures.
8	Abidi et al. (2014)[114]	Humanitarian supply chain performance management: a systematic literature review	The review deals with various humanitarian supply chain management measurement, frameworks and indicators.

Source: Author research (2024)

2.2.7 Key performance Indicator used online food industry.

The literature review reveals that the key performance indicators used in the food industry are diverse and varied. According to [115], key performance indicators can include financial metrics, customer satisfaction, internal business processes, and perspectives on learning and growth. Despite the extensive research on structural modeling and ordinal logistic regression in various fields, these methods have received limited attention in the food industry [115]. The following table presents a list of key performance indicators identified from the literature review. A total of 37 key performance indicators were compiled from 16 academic journals.

Table2.2 Key Performance Indicator

KPIs	Authors
1. Customer query time [1,14] 2. Level of customer perceived value of product [1,2,4,5,6] 3. Order lead time [1,6,7,8] 4. Service flexibility [1,4,6] 5. Delivery lead time [6,7] 6. Effectiveness of delivery invoice methods [1] 7. Delivery reliability [1,3,4,7,8,9] 8. Responsiveness to urgent deliveries [1,6,8] 9. Effectiveness of distribution planning schedule [1] 10. Achievement of defect free deliveries [1] 11. Range of products and services [4] 12. Customer response time [2,5,6,7] 13. Order fill rate [4,7,8,11,14] 14. Distribution performance [1,6,7,8] 15. Market share [2,5,6,12,15] 16. Customer satisfaction [2,3,5,713] 17. Delivery flexibility [2,5,7] 18. Accuracy of	1. (Bigliardi & Bottani, 2010)[115], 2. (Chaowarut et al., 2009)[116], 3. (Afonso & do Rosário Cabrita, 2015)[117], 4. (Hashmi & Zhang, 2016)[118], 5. (Aramyan et al., 2007)[119], 6. (Gellynck et al., 2008)[120], 7. (Chopra et al., 2017)[121], 8. (Coles et al., 2023)[122], 9. (Jacxsens et al., 2010)[123], 10. (Wang, 2013)[124], 11. (Pongpanich et al., 2018)[125], 12. (Katchova & Enlow, 2013)[126],

forecasting techniques [(1,4)] 19. Purchase order cycle time [(1,4,8)] 20. Planned process cycle time [(1,4,8)] 21. Effectiveness of master production schedule [(1)] 22. Capacity utilization [(16)] 23. Manufacturing lead time [(5,6,8,13)] 24. Inventory accuracy [(8)] 25. Total profit [(2,6,7)] 26. Total inventory cost [(1,2,5,6,7,14)] 27. Return on investment [(1,2,3,4,5,7,8,11,12,14,15,16)] 28. Variations against budget [(1,2,15)] 29. Cost per operation hour [(1,4,14)] 30. Investment in training per year [(3,14)] 31. Order entry methods [(1)] 32. Level of information sharing [(1,7)] 33. Volume flexibility [(2,5,7)] 34. Product development cycle time [(4,8,9)] 35. Sensory properties and shelf life [(2,5,6,7,8)] 36. Product safety and health [(2,5,6,7,9,10)] 37. Product reliability and convenience [(2,5,7,9,10)]	13. (Pinna et al., 2018)[127], 14. (Shashi et al., 2018)[128], 15. (Brezuleanu et al., 2014)[129], 16. (Paustian et al., 2015)[130].

[(1,2)] Authors
Source: Author research (2024)

2.2.7 Customer satisfaction

Services are characterized as means of conveying intangible economic activities that provide value to the customers. This entails transactional communication between the service provider and the consumer [131]. Depending on the type of product, services can differ between organizations. The service process culminates in a customer's satisfaction with the service experience [132]. Therefore, it is critical that service organizations prioritize the development of a system through which service concepts are effectively communicated to customers.

Food delivery enterprises that wish to cultivate a devoted clientele place significant emphasis on customer fulfillment. Evaluations of consumer loyalty, service quality, and satisfaction are substantially influenced by delivery performance measurement. The influence of delivery performance on customer loyalty and satisfaction is investigated in [133]. It has been observed that customer satisfaction levels are substantially impacted by order accuracy, delivery speed, and convenience, all of which contribute to increased customer loyalty.

The time of delivery, the accuracy of the order, and the condition of the delivered item are all components of fulfillment, which consists of the actions taken to guarantee that customers receive their orders [134]. Before engaging in online purchasing, consumers hold delivery price guides, delivery schedules, and delivery guarantees in high regard [135]. In addition to the aforementioned factors, customers assess the characteristics of delivery time, which include: (1) the overall reduction of delivery time, (2) notifications regarding possible shipping delays, and (3) a shipment tracking number [136]. According to the multichannel literature, customers base their purchase decisions on a utility function that includes both transaction utility and acquisition utility (i.e., benefits of reduced search cost, convenience, and fast home delivery) and promotions, and purchase costs, and product quality, promotions, and purchase costs [137]. Crucial customer services in the realm of online retail, including expedited delivery services and streamlined return policies, exert a substantial influence on consumers' purchasing choices [138]. This finding supports the notion that customers perceive their online purchases as more valuable when they receive their packages promptly and securely [139]. Indeed, product delivery has an impact on every fundamental value proposition objective. Customers place significant importance on the punctual delivery of products, irrespective of the purchasing channel [139]. Despite this, customers are at ease when they have confidence in the delivery capabilities of the company [140]. According to a study by Shih (2004)[141], consumers' favorable attitudes toward online shopping significantly and heavily influenced their approval of online delivery. In the realm of online shopping, consumers place significant value on the timely completion of transactions and the satisfactory delivery of products [142, 143]. In order to meet this expectation, e-retailers ought to deliver superior service quality, which includes ensuring timely deliveries, accurate orders, and exceptional delivery conditions [134]. Customer satisfaction is positively impacted by delivery factors such as the perceived time of delivery [140, 144]. The correlation between dependable and punctual delivery and customer satisfaction, which in turn encourages repeat purchases, demonstrates that timely delivery increases customer satisfaction [145]. As a result, customers are more likely to experience anxiety and dissatisfaction the longer they must wait between placing an order and receiving the product [140], given that delays have a negative impact on customer satisfaction [146]. According to Tzeng et al. (2021)[143], the logistics of returned items throughout the entire delivery process inflicts customer frustration and erodes their faith in online purchasing. Customer satisfaction refers to the sentiment of contentment or discontentment expressed by an individual subsequent to assessing the actual performance outcomes of a product concept in comparison to its anticipated performance outcomes [147]. The dimension or indicator of customer satisfaction is as follows: dissatisfied customers indicate if the performance falls short of their expectations; satisfied customers indicate if

the performance meets their expectations; and extremely satisfied or happy customers indicate if the performance surpasses their expectations [147].

Customer satisfaction is an attitude developed through an experience. It is defined as an assessment of the qualities or advantages of a service or product, or the product itself, that provide a certain level of pleasure to the customer in relation to the fulfillment of their consumption needs. Value, quality, and service are all potential indicators or dimensions of consumer satisfaction. Client loyalty can be achieved through the provision of exceptional value to customers. [72].

Consumer satisfaction is the outcome the consumer experiences after using or consuming the product in question, as measured against the discrepancies between their initial expectations prior to making the purchase (or other performance standards) and the actual performance of the product [148].

The following studies have conducted in-depth investigations into the subject of customer satisfaction: [149-151]. Scholars have investigated the risk perception and consumers' intent to utilize online food delivery. According to a study by Hong et al. (2021)[152], the following predictors—perceived utility, perceived ease of use, price-saving benefit, time-saving benefit, and trust—significantly influenced the intention to use online food delivery. However, no moderating effect of COVID-19 was identified in this regard. According to a study [153], consumers' intention to utilize these services was adversely affected by perceived risk, including perceived physical risk and COVID-19 risk. Furthermore, the study found that perceived risk did not serve as a moderating factor in the relationship between desire and intention. Consumer satisfaction, loyalty, and consumer characteristics have been examined by other academicians. Customers who perceive a high threat, have low involvement with the product, see few benefits in online food delivery, and order food online infrequently are less likely to use these services [154]. Local enterprises may employ online food delivery as a strategy to overcome adversity and increase their competitiveness. Consumer behavior research [155] has demonstrated that customers' intentions to support local businesses are positively influenced by affective responses to the Covid-19 pandemic, including anxiety and hope. Furthermore, there is a growing inclination among consumers to utilize mobile and online payment systems [156]. This favorable environment presents an ideal setting for the advancement of online food delivery.

To the authors' knowledge, there is a paucity of research pertaining to the quality of online food delivery in the aftermath of the Covid-19 pandemic. In their study, Chan and Gao (2021)[157] introduced the current quality of online food delivery (DEQUAL) index, which employs 32 validated indicators to assess the current quality of online food delivery. The authors also provided recommendations on strategies to enhance consumer loyalty and satisfaction with a restaurant. Scholars have investigated the impact of the quality of online food delivery services on consumer loyalty and satisfaction in the food literature. With respect to this matter, assurance, meal quality and hygiene maintenance, system operation, reliability, and security were identified as significant predictors of customer satisfaction [158].

*Complaint Level.

The complaint level is how high the complaint or delivery of discontent, discomfort, frustration, and rage about the service or product is. The dimension or indication of complaint level is the high level of complaint [159]. Many earlier studies, including, have investigated this degree of complaint [160, 161].

*Service Quality

Service Quality is strategy businesses use to continually enhance the quality of their processes, products, and services. The dimensions or indicators of service quality play a crucial role: the higher the quality of service a company provides, the greater the satisfaction experienced by consumers, and vice versa[162].

Customers are content or dissatisfied with the service offered, depending on whether the quality of service is excellent or terrible. The degree of satisfaction determined by questionnaires or questionnaires in analyzing the quality of a service is referred to as dimensions or indicators of quality of service.

Many prior researchers have investigated service quality, including product quality, customers satisfaction, and complaint level. [151, 163].

Table 2.3 Previous theories research

No	Author (year)	Previous research results	Security with this article	Difference with this article
1	(Hartatik et al., 2024)[164]	product quality, service quality have a positive and significant effect on customer satisfaction and complaint level	quality of service affect customer satisfaction & complaint level	product quality affects customer satisfaction & complaint level
2	(Rahman et al., 2018)[165]	Product quality has a positive and significant effect on customer satisfaction and complaint levels	quality of service affect the level of complaints	Product quality affects customer satisfaction
3	(Sudiatmika & Purwanti, 2020)[166]	product quality, service quality and x3 are positive and	Product quality affects customer	quality of service affects the level of

		significant towards customer satisfaction and complaint level	satisfaction	complaints
4	(Aryaman et al., 2024)[167]	product quality, service quality and x3 are positive and significant towards customer satisfaction and complaint level	quality of service affect customer satisfaction & complaint level	product quality affects customer satisfaction & complaint level
5	(Librianty & Yuliarto, 2019)[168]	product quality & x3 positive and significant impact on customer satisfaction and complaint level	quality of service affect the level of complaints	Product quality affects customer satisfaction
6	(Jacob, 2023)[169]	product quality, service quality and x3 are positive and significant towards customer satisfaction and complaint level	Product quality affects customer satisfaction	quality of service affects the level of complaints
7	(Aini et al., 2019)[170]	product quality, quality of service is positive and significant to customer satisfaction and complaint level	quality of service affects customer satisfaction & complaint level	product quality affects customer satisfaction & complaint level
8	(Rangkuti, 2003)[171]	product quality is positive and significant to customer satisfaction and complaint level	quality of service affects the level of complaints	Product quality affects customer satisfaction
9	(Wibowo, 2022)[151]	product quality, quality of service is positive and significant to customer satisfaction and complaint level	Product quality affects customer satisfaction	quality of service affects the level of complaints
10	(Hidayati et al., 2023)[172]	product quality, quality of service is positive and significant to customer satisfaction and complaint level	quality of service affects customer satisfaction & complaint level	product quality affects customer satisfaction & complaint level
11	(Mulyadi et al., 2023)[163]	product quality is positive and significant to customer satisfaction and complaint level	quality of service affects the level of complaints	Product quality affects customer satisfaction
12	(Afrilia & Ratihsabella, 2023)[149]	product quality, quality of service is positive and significant to customer satisfaction and complaint level	Product quality affects customer satisfaction	quality of service affects the level of complaints
13	(Yuniati, 2021)[173]	product quality, service quality have a positive and significant effect on customer satisfaction and complaint level	quality of service affects customer satisfaction & complaint level	product quality affects customer satisfaction & complaint level
14	(Anjelina et al., 2024)[174]	product quality is positive and significant to customer satisfaction and complaint level	quality of service affects the level of complaints	Product quality affects customer satisfaction
15	(Mahmud, 2022)[175]	product quality, quality of service is positive and significant to customer satisfaction and complaint level	Product quality affects customer satisfaction	quality of service affects the level of complaints

III. Research framework and data collection

3.1 Research framework

After reviewing the relevant literature, it can be determined that the performance has a direct impact on the level of satisfaction experienced by customers. The framework has been developed based on the questionnaires, and it includes a variety of indicators, including ease of order, quality of order, location accuracy, tracking precision, convenience, refund mechanism, problem frequency, and price affordability, all of which have the potential to influence customer satisfaction. Additionally, the following indicators customer service, navigation speed, technology security, and recommendation have an impact on the performance system. Our key performance indicators are in accordance with Table 2.2 within the literature review.

The confirmatory factor analysis (CFA) is a significant analytical technique that is used extensively in research for corporations as well as in a broad variety of other social science fields. A hypothesized model is developed in advance based on theory or previous evidence. Its fit to a dataset from the population is evaluated by examining various fit indices, parameter estimates, and additional supports such as model modification indices, residual values, and standard errors of the parameter estimates[176, 177]. Both of these methods are included in the framework of structural equation modelling, which is where the method is included. Confirmatory factor analysis (CFA) is a type of analysis that is often used to support construct validity, improve scales, test measurement in variance, and look at different ways of thinking about a theoretical framework [178].

Figure2.2 Conceptual framework

Source: Author research (2024)

*Note: Customer satisfaction and system performance are latent variables measured by the indicators

3.2 Research Hypothesis

Our hypotheses are the following:

Hypothesis 1: The delivery system performance of Meituan in China and Glovo in Côte d'Ivoire positively influence customer satisfaction.

Hypothesis 2: Improvements in Glovo Côte d'Ivoire's delivery system performance will lead to a corresponding increase in customer satisfaction.

Hypothesis 3: Metituan's and Glovo delivery system performance are influenced by factors such as Customer service, Navigation speed, Technology security, Recommendation.

Hypothesis 4: Meituan's delivery system performance has a greater impact on customer satisfaction compared to Glovo Côte d'Ivoire.

3.3 Data collection: Meituan and Glovo

This study will be done using a case research methodology. The selection of case study is based on its ability to provide the researcher with a comprehensive grasp of Meituan China's performance. The significance of case study is underscored by Young and Kim [179], who recognizes it as a potent method of qualitative analysis that entails meticulous and comprehensive observation of a social entity, regardless of its nature. In order to conduct a thorough examination of a person, group, organization, or phenomena, Mugenda (2003)[180] suggested using a case study approach.

The case study used a sample of 500 consumers from Meituan China in Hongshan District and 500 customers from Glovo Cote d'Ivoire in Abidjan District. This presupposes that the individuals being surveyed possess a certain level of understanding about the contentment and effectiveness of the system.

Meituan in China will provide a questionnaire to its customers, while Glovo CI will gather data using the same method. The surveys will be designed to include both closed-ended and open-ended questions, enabling the respondents to freely express their opinions without any restrictions.

In this research, the Smart PLS3 Software was used to analyze the indicators and assess their influence on the performance system and customer satisfaction. The data analysis underwent two stages: the calculation of the correlation matrix between important performance indicators, and the use of Confirmatory Factor Analysis combined with Regression and Structural Modelling Equation.

One Factor Regression Model Summary

$$CS_i = \alpha_0 + \sum_{i=1}^{j} AppPerf_{ij} + \varepsilon_i \tag{1}$$

Two Factor Regression Model Summary

$$CS_i = \alpha_0 + AppPerf_{ij} + \varepsilon_i \tag{2}$$

IV. Data analysis and results

4.1 Descriptive statistic and demographic

Descriptive statistics are very effective techniques for summarizing extensive collections of data under examination. They enable the data to be presented in a comprehensible manner by using indicators. Descriptive statistics serve as the foundation for inferential testing. In this part, descriptive statistics were used to characterize the demographic variables separately and identify the most important ones. Additionally, descriptive indications pertaining to the questionnaire were provided.

This research used the "Microsoft Forms" platform to create surveys, which were then delivered to Meituan and Glovo users residing in the Hongshan and Abidjan districts, respectively. Users were asked to participate using numerous social platforms like WeChat, Weibo, Facebook forums, and WhatsApp. We collected a grand total of 1000 surveys. Upon conducting a thorough screening process, we determined that all 1000 surveys were deemed legitimate, resulting in a questionnaire recovery rate of 100%. The demographic characteristics of the participants are shown in the following tables. According to Meituan's data, 195 female respondents make up 39% of the survey's participants, while 305 male respondents account for 61% of the total. Regarding Glovo, we discovered that out of the total respondents, 342 were male, accounting for 68.4%, while 158 were female, making up 31.6%. Due to the firm's international operations, we focused our business strategy on clients of the same age range and educational background. Meituan's age distribution reveals that the majority of its users, 45%, are in the 21–25 age range, while 32% are between 26-30 years old. This data suggests that the population in the Hongshan district is mostly youthful, technologically savvy, and open to embracing new advancements. Regarding Glovo, the study indicated a notable focus on users aged 21–25 years, 31–35 years, and 36 years and older, accounting for a total of 85.2%. This number suggests that these individuals possess the financial resources to purchase online meal delivery and are enthusiastic about engaging in this service. In terms of education level, the majority of students in the Hongshan district are pursuing bachelor's and master's degrees, accounting for 82.4% of the population. In contrast, in the Abidjan district, Glovo users have a distribution of education levels, with 41.4% being master's students and 25.4% having other degrees. The populations of China and Cote d'Ivoire are interested in using online meal delivery services to meet their daily dietary requirements.

Table4.1 Meituan demographic data

Indicator	Option	Frequency	Percentage
Gender	Male	305	61%
	Female	195	39%
Age	16-20years	15	3%

21-25 years	225	45%
26-30 years	160	32%
31-35 years	80	16%
≥36 years	20	4%

Level of study		
	Bachelor	186	37%
	Master	227	45.4%
	PhD	28	5.6%
	Other Degree	59	11.8%

Source: Author research in China (2024)

Table4.2 Glovo demographic data

Indicator	Option	Frequency	Percentage
Gender	Male	342	68.4%
	Female	158	31.6%
Age	16-20years	48	9.6%
	21-25 years	185	37%
	26-30 years	26	5.2%
	31-35 years	123	24.6%
	≥36 years	118	23.6%
Level of study	Bachelor	108	21.6%
	Master	207	41.4%
	PhD	58	11.6%
	Other Degree	127	25.4%

Source: Author research in Cote d'Ivoire (2024)

4.2 Correlation matrix

By incorporating confirmatory factor analysis (CFA) into structural equation modelling (SEM), this research conducts preliminary assessments to guarantee the dependability of the empirical findings. One example of such an examination is correlation analysis, which determines the direction and relationship between two variables. The results for both the explained and explanatory variables are presented in the table below.

Table4.3 Correlation matrix

OrderEase	1.00												
DelivTim	0.67	1.00											
OrderQlty	0.11	0.42	1.00										
Location	0.73	0.66	0.59	1.00									
Tracking	0.54	0.65	0.39	0.61	1.00								
Convenient	0.62	0.28	-0.31	0.24	0.57	1.00							
Refund	-0.06	-	0.16	-0.06	0.26	0.13	1.00						
Problems	-0.14	0.26	-0.26	-0.018	0.01	-0.22	0.19	1.00					
Price	0.11	-	-0.13	-0.08	0.57	0.33	0.24	0.57	1.00				
CustServ	0.26	0.16	-0.00	-0.08	0.50	0.44	0.17	0.03	0.56	1.00			
NvgSpeed	-0.52	0.17	-0.17	-0.40	-0.79	-0.61	-	-	-	-	1.00		
TechSecu	-0.06	0.43	-0.04	-0.13	0.33	0.38	0.29	0.08	0.62	0.67	-0.62	1.00	
Recomm	0.34	-	0.32	0.65	0.38	0.20	0.12	0.02	0.46	0.45	-0.15	-	1.00

DelivTim column (dashes): -0.37, -0.22, -0.46
NvgSpeed column (dashes): -0.24, -0.41, -0.29, -0.16
TechSecu column (Recomm): -0.12

Source: Author research (2024)

The purpose of correlation analysis is to measure the extent of correlation between different variables, typically represented by the Pearson coefficient [181]. The value of r ranges from -1 to 1, with a value closer to 1 indicating a stronger positive correlation between the variables. Conversely, a value closer to -1 indicates a stronger negative correlation between the variables. A general guideline is that a correlation exceeding 0.8 is

considered significant, suggesting that the variables are closely related. In such cases, combining the variables into a single factor can help address the discrepancy [182]. However, based on the table, it is evident that, except for the strong relationship between ease of order and location precision, and between tracking efficiency and navigation speed, the absolute correlation between the variables is low. This indicates that the variables can be analyzed as separate factors.

4.3 Confirmatory Factor Analysis (CFA)

The research employs the CFA in two ways: firstly, it analyzes China's Meituan app service; secondly, it examines Ivory Coast's Glovo app service. Structural Equation Modeling (SEM) involves several component models that establish a connection between a hidden variable and its observable indicators, as well as other latent variables or independent performance measures.

4.3.1 The impact of Glovo 's delivery system performance on customer satisfaction One factor model

In its simplest form, CAF is envisaged as a one-factor model. Figure 1 below portrays the CFA for the delivery services of China's Meituan app in a one-factor model.
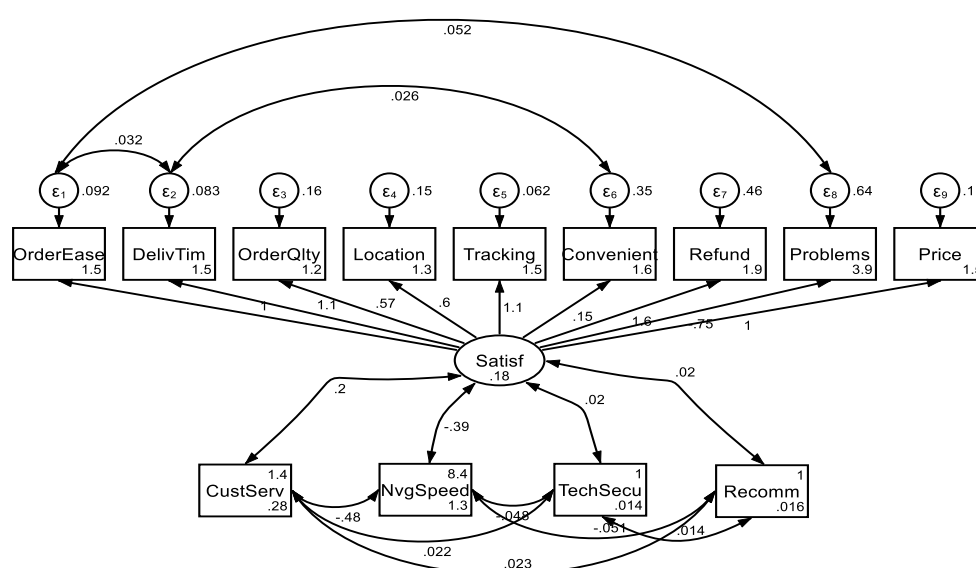

Figure3.1 One-factor model for Glovo

Source: Author research (2024)

The one-factor CFA model is chosen based on the diagnostic findings of the investigation, which revealed excessive covariance when three or more latent variables are used. For example, the three-factor model for Glovo has a covariance of 0.97, which goes against the unique validity assumption of the CFA, as mentioned by [183]. Interesting discoveries may be obtained by using covariance to map the latent variable to its indicators and performance components in the one-factor model. The chart illustrates that consumers' happiness with Côte d'Ivoire's Glovo app is influenced by many major characteristics, including convenience of purchase, delivery time accuracy, tracking efficiency, refund mechanism, and price affordability. It is important to mention that there is a strong negative correlation between the rise in problematic incidents on the Glovo app and customer happiness. The performance of the app is primarily influenced by aspects such as the quality of customer service and the speed of navigation, which are crucial components of the digital experience (Lundberg, 2021). However, the covariances between the performance indicators contribute to enhancing the accuracy of the model. The findings indicate a positive correlation between consumer satisfaction and all performance parameters, except for navigation speed. All of the covariances in the table of one factor model findings for Meituan and Glovo are statistically significant at a level of 0.01 or below. Additionally, they are all below the distinct validity cut-off point of 0.85.

4.3.2 The impact of Meituan's delivery system performance on customer satisfaction (one factor model)

Turning to Meituan, the results are tangential to the ones for Glovo on aspects like ease of order, delivery time precision, tracking efficiency, and price affordability. Additionally, location precision has also been found accurate to users of Meituan. Interestingly, the significant negative association observed between the frequent problematic encounters and level of satisfaction for Glovo is not the same for Meituan case. An insignificant,

howbeit positive, level of association is observed. This then implies that how frequently Meituan users encounter problems do not deteriorate their level of satisfaction thus being a key aspect for consideration. Meituan users may encounter a variety of problems while using the platform, such as technical glitches, delays in service, or issues with the quality of products. However, these problems do not necessarily detract from their overall level of satisfaction for several reasons. Firstly, Meituan has built a strong reputation for providing convenient and reliable services, which means that users are likely to view any issues they encounter as isolated incidents rather than a reflection of the overall quality of the platform. Additionally, Meituan has a dedicated customer service team that is available to assist users with any problems they may encounter, helping to resolve issues and ensure that users are satisfied with their experience. Furthermore, Meituan offers a wide range of services and products, meaning that users have a variety of options to choose from if they encounter problems with a particular service or product. Overall, while problems may arise for Meituan users, they are unlikely to significantly impact their overall level of satisfaction due to the platform's strong reputation, excellent customer service, and diverse range of offerings.
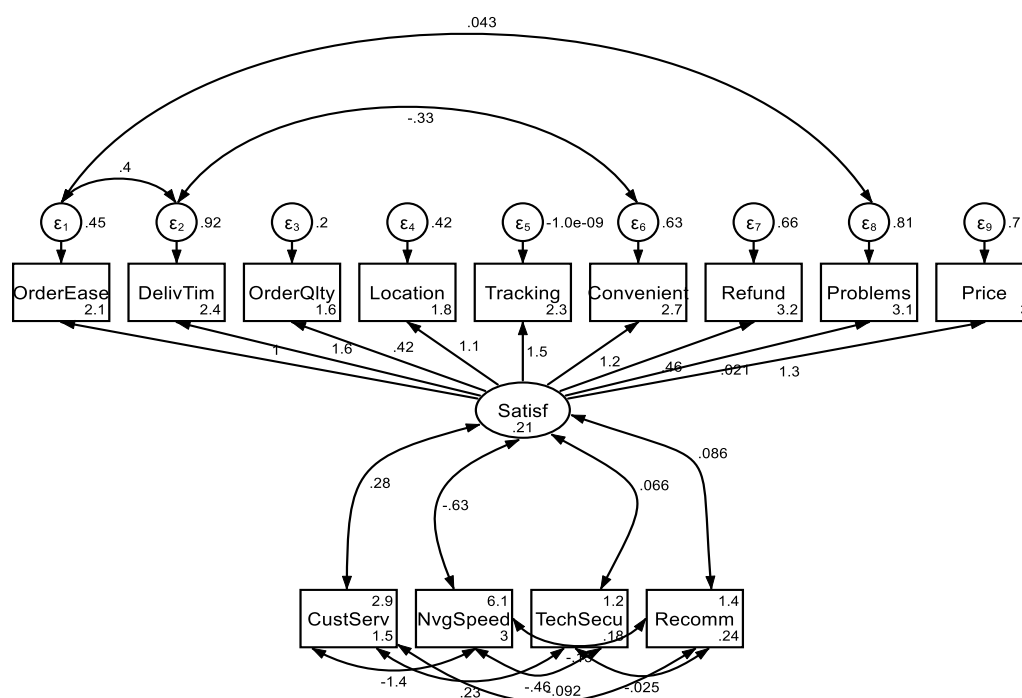

Figure4.2 One-factor model for Meituan

Source: Author research (2024)

With all the covariances being lower than 0.85, it means that the four aspects of performance meet the threshold of distinct validity. A predominant positive influence is noticed between the level of satisfaction and performance for the Meituan delivery system. This influence is relatively higher than in the case of Glovo as Table of CFA model result below shows.

These results (Figure 4.1 and Figure4.2) revealed that there is a positive influence on both companies even though the positive influence on Glovo is lower as compared to Meituan. These results confirmed our first hypothesis.

Hypothesis 1: The delivery system performance of Meituan in China and Glovo in Côte d'Ivoire positively influence customer satisfaction.

4.3.3 Comparative analysis of the impact of delivery system performance on customer satisfaction between Meituan and Glovo

The results of the One-Factor Confirmatory Factor Analysis (CFA) model have revealed that the influence of the delivery system on customer satisfaction is relatively low compared to Meituan. This can be attributed to the fact that customers do not have the option to choose and have not yet had the opportunity to experience a superior level of service, such as that provided by the global leader Meituan. In contrast, the market leader in online food delivery in Cote d'Ivoire, particularly in the Abidjan district, is Glovo.

The findings suggest that there is a gap in the level of satisfaction provided by the current delivery systems in comparison to what could potentially be offered by a platform like Meituan. This highlights a potential opportunity for improvement and growth within the industry. By analyzing the market dynamics and customer

preferences, businesses can identify areas where they can enhance their services to better compete with industry leaders like Meituan and Glovo.

Meituan's success can be attributed to its ability to consistently deliver high-quality service and meet the evolving needs of its customers. By continuously innovating and adapting to changing market trends, Meituan has been able to establish itself as a global leader in the online food delivery industry. In contrast, Glovo's dominance in the Cote d'Ivoire market highlights the importance of understanding local preferences and tailoring services to meet the unique needs of customers in different regions.

Overall, the results of the CFA model underscore the significance of customer satisfaction and the impact of service quality on consumer preferences. By leveraging data and insights from market research, businesses can identify opportunities for growth and optimization within the online food delivery industry. Through strategic planning and innovation, companies can enhance their offerings to better meet the expectations of customers and differentiate themselves from competitors.

Table4.4 One-Factor CFA model results for Glovo and Meituan

Standardized	Meituan	Glovo
Measurement		
OrderEase	1	1
Satisf.	Constrained	Constrained
DelivTime	1.617325***	1.070414***
Satisf	(0.091685)	(0.0378746)
OrderQlty	0.4214458***	0.5701728***
Satisf	(0.0594356)	(0.0476669)
Location	1.098185***	0.5965908***
Satisf	(0.0806524)	(0.0477921)
Tracking	1.468788***	1.12927***
Satisf	(0.0923605)	(0.0470034)
Convenient	1.227322***	0.1456448***
Satisf	(0.0993474)	(0.0652089)
Refund	0.4634024***	1.639171***
Satisf	(0.1082601)	(0.0945795)
Problems	0.0213969	-0.7539255***
Satisf	(0.1054083)	(0.0958233)
Price	1.267444***	1.01616***
Satisf	(0.0459309)	(0.0510197)
Cov(CustServ, Satisf)	0.2767421***	0.2032778***
	(0.0356573)	(0.0152909)
Cov(NvgSpeed, Satisf)	-0.6297942***	-0.387499***
	(0.0606212)	(0.031232)
Cov(TechSecu, Satisf)	0.0661559***	0.0200767***
	(0.0100142)	(0.0025906)
Cov(Recomm, Satisf)	0.0859385***	0.0200158***
	(0.013167)	(0.0027318)

source: Author research (2024)

4.3.3.1 One-factor Regression Model summary for Meituan and Glovo

The results contained in table 10 below follows the computation of the linear regression model specified in section (3) "methodology".

$$CS_i = \alpha_0 + \sum_{i=1}^{j} AppPerf_{ij} + \varepsilon_i \qquad (1)$$

Where CS_i denotes Customer satisfaction, $\sum_{i=1}^{j} AppPerf_{ij}$ is a vector variable that represents the various

app performance metrics like customer service, navigation speed, technology security and recommendation intrinsic in the one-factor model and ε_i is the error term.

Table4.5 One-factofr Regression Model summary for Meituan and Glovo

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Meituan	0.849	0.721	0.719	0.20098
Glovo	0.895	0.801	0.793	0.23212

Source: Author research (2024)

a Predictors: (Constant), Customer service, Navigation speed, Technology security, and Recommendation.

b Dependent Variable: Customer Satisfaction.

Based on the results of the One-factor Regression model summary for Meituan in China and Glovo in Côte d'Ivoire, we can see that both models have strong correlations between the independent variables (Customer service, Navigation speed, Technology security, Recommendation) and the dependent variable (Customer Satisfaction).

The R value of 0.849 for the Meituan model signifies a robust positive correlation between the customer satisfaction metric and the independent variables. The R Square value of 0.721 indicates that the independent variables account for approximately 72.1% of the variance in Customer Satisfaction. In addition, the adjusted R-squared value of 0.719 provides further support for this relationship. At 0.20098, the estimate's standard error is minimal, suggesting that the model adequately represents the data.

In a similar vein, the R value for the Glovo model is an exceptionally high 0.895, indicating a robust positive correlation between the dependent variables and customer satisfaction. The R Square value of 0.801 suggests that the independent variables account for around 80.1% of the variance in Customer Satisfaction. In addition, the adjusted R-squared value of 0.793 substantiates this correlation. The standard error of the estimate is marginally greater than that of Meituan, as indicated in the table.

The observed outcomes can be attributed to the fact that Chinese consumers have had access to online food delivery services since at least 2003, subsequent to the severe acute respiratory syndrome (SARS) outbreak [184]. Given this extended period of experience, it is unsurprising that the populace would expect the highest quality of service from online food delivery and delivery systems. The likelihood that individuals in Côte d'Ivoire, who are relatively new to using online food delivery applications, will accept any service is supported by the data presented in the One-factor Model Coefficient table.

Table4.6 One-factor Model Coefficients

Delivery App		Unstandardized Coef.		Standardized Coef.	t	Sig.
		B	Std. Err			
Glovo	Constant	1.055	0.112		9.381	0.000
	Customer service	0.013	0.011	0.345	1.216	0.225
	Navigation speed	0.211	0.009	0.958	23.721	0.000
	Technology security	0.527	0.028	0.596	18.865	0.000
	Recommendation	0.204	0.021	0.264	9.874	0.000
Meituan	Constant	3.469	0.192		18.040	0.001
	Customer service	0.188	0.032	0.041	5.954	0.001
	Navigation speed	0.047	0.015	0.187	3.225	0.001
	Technology security	0.829	0.249	0.337	3.327	0.001
	Recommendation	0.370	0.233	0.161	1.590	0.113

Source: Autrhor research (2024)

4.3.3.2 Two factor model for Meituan and Glovo

The study incorporates an additional latent variable into the model as a robustness measure, thereby transforming it into a two-factor CFA model. The performance level, which is mapped to the four metrics of customer service quality, navigation speed, technological security, and recommendation, constitutes the second latent variable. As anticipated, these comprise a portion of the foundation of the digital experience for the client. As demonstrated in Table 14 in the Appendix, the degree of discernible correlation between performance and contentment is enhanced for the Meituan application in comparison to the Glovo application. In contrast to the one-factor model, the negative and statistically significant relationship between the frequency of problematic encounters and Glovo's level of satisfaction indicates that the one-factor model may not contain an overidentification discrepancy. This is additionally supported by the goodness-of-fit statistics presented in Table 3, which indicate that the two-factor model for the Meituan app exhibits a comparatively greater enhancement in inferential power.
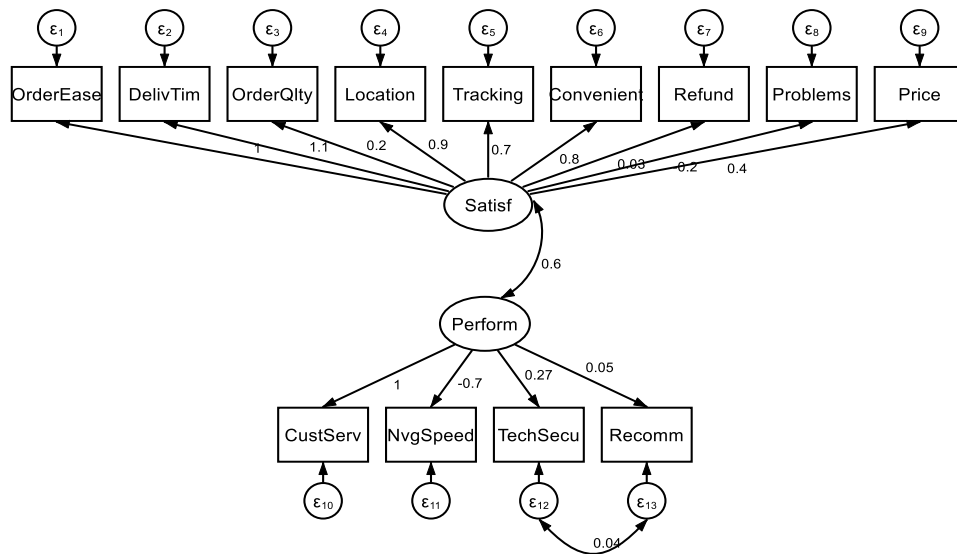
Figure4.3 Two-factor model for Glovo

Source: Author results (2024)

A low level of performance has plagued the distribution systems of Glovo, an on-demand delivery service, in Côte d'Ivoire. Dissatisfied customers have expressed their discontent regarding service-related issues, incorrect orders, and delayed deliveries. As a consequence, both consumer satisfaction and confidence in the organization have declined. Additionally, the delivery carriers appear to be overworked and incapable of managing the increased volume of customers, resulting in extended waiting periods. Furthermore, an inadequate system of communication and coordination among company personnel has contributed to an unstructured and ineffective delivery procedure. In general, Glovo's inadequate performance in Côte d'Ivoire's distribution systems has negatively impacted the company's reputation and customer loyalty, highlighting the critical need for substantial operational process improvements. Customer dissatisfaction and potential loss of business may ensue if logistics outsourcing fails to meet the expectations of its clientele, as stated by (ŖwitaŖa et al. 2019). Upon careful examination and interpretation of the two-factor model Figures 4.3 pertaining to Glovo, it is possible to assert that our second hypothesis has been validated.

Hypothesis 2: Improvements in Glovo Côte d'Ivoire's delivery system performance will lead to a corresponding increase in customer satisfaction.
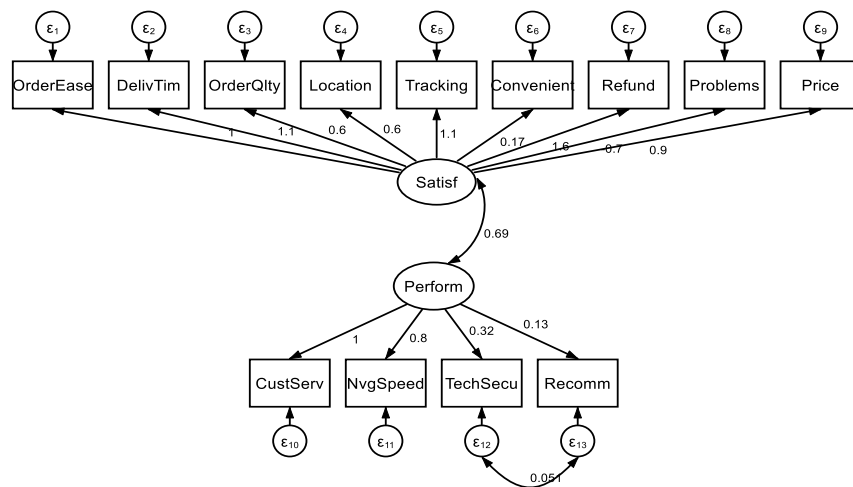

Figure4.4 Two-factor model for meituan

Source: Author research (2024)

As depicted in the Two-Factor Model for Meituan, the performance delivery system of Meituan is thriving for a variety of reasons. To commence, the organization has made substantial investments in establishing an extensive network of delivery carriers and forging alliances with a multitude of restaurants, thereby guaranteeing the prompt and effective fulfillment of orders. The extensive network facilitates the provision of a diverse selection of culinary options to patrons, thereby enhancing the platform's attractiveness. Additionally, Meituan has leveraged cutting-edge technology in order to streamline the delivery procedure. By employing data analytics and real-time monitoring systems, the organization is capable of effectively forecasting delivery durations and allocating orders to the most nearby accessible driver, thereby diminishing customer wait times. Furthermore, Meituan has prioritized delivering outstanding customer service through the provision of a user-friendly interface for placing orders and timely responses to inquiries and complaints. The dedication to ensuring user fulfillment has facilitated the development of user trust and loyalty, resulting in favorable word-of-mouth recommendations and recurring transactions [185]. In general, Meituan's performance delivery system is operating efficiently as a result of its vast network, cutting-edge technology, and unwavering commitment to customer satisfaction. The aforementioned elements have played a role in the organization's triumph within the fiercely competitive food delivery industry.

Table4.7 Goodness-of-fit statistics for both models

Fit statistic	Meituan		Glovo	
	One-factor	Two-factor	One-factor	Two-factor
Population error				
RMSEA	0.065	0.058	0.083	0.051
90% CI, lower bound	0.041	0.039	0.046	0.040
Upper bound	0.066	0.068	0.121	0.059
pclose	0.057	0.062	0.067	0.079
Baseline comparison				
CFI	0.965	0.976	0.881	0.952
TLI	0.943	0.931	0.872	0.891
Size of residuals				
SRMR	0.047	0.056	0.081	0.066
CD	0.959	0.961	0.901	0.963

Source: Author results (2024)

The table indicates that the root mean error of approximation (RMSEA) is within the acceptable range, suggesting a decent fit. This is further supported by the p-values being greater than 0.05, which indicate that the null hypothesis that the sample closely fits the population is not supported. Positive values of the comparative fit index (CFI) indicate a satisfactory fit. The enhanced explanatory power of the two-model factor is thus apparent in both applications, although it is more conspicuous in the case of the Glovo application.

Based on this data and the Goodness-of-Fit metric, we determined that the following indicators impact the performance of both delivery systems: customer service, navigation speed, technology security, and recommendation. In fact, customer service, navigation speed, technological security, and recommendations all have a significant impact on the performance of the Glovo and Meituan delivery systems. Ensuring exceptional customer service is critical for customer retention and fostering brand loyalty. Customers have an expectation of receiving timely updates regarding their purchases and prompt and helpful responses to their inquiries and complaints [186]. Ensuring a seamless navigation experience is critical for facilitating customers' ability to navigate the application, place orders, and monitor deliveries without encountering any disruptions or delays. Customers are likely to become dissatisfied and defect to a competitor if the application exhibits sluggish performance or navigational challenges [187]. Moreover, technology security in the delivery systems of Meituan and Glovo is paramount. When utilizing the applications, customers entrust critical information, including payment particulars and personal data. Consequently, safeguarding this information against cyber threats and violations of data is of the utmost importance. In addition to fostering customer confidence, a secure platform guarantees adherence to data protection laws and regulations.

Moreover, recommendations exert a significant impact on consumer behavior and serve as a catalyst for increased sales. Meituan and Glovo can enhance customer engagement and promote repeat purchases by employing personalized recommendations that are generated from previous orders and preferences. Furthermore, recommendations facilitate the sale of additional products and increase revenue for delivery platforms.

Customer service, recommendations, technology security, and navigation speed are, in summary, factors that significantly influence the performance of the Meituan and Glovo delivery systems. By prioritizing these critical domains, the delivery platforms can bolster customer contentment, stimulate revenue generation, and sustain a competitive advantage within the saturated food delivery industry. We conclude, based on our observations from Figure 4.4; Table 4.7 , that hypothesis 3 is confirmed .

Hypothesis 3: Metituan's and Glovo delivery system performance are influenced by factors such as Customer service, Navigation speed, Technology security, Recommendation.

4.3.3.3 Two-factor regression model summary

Unlike the one-factor model, the two-factor model is based on two indices with corresponding indicators. The results in table (11) follow equation (2).

$$CS_i = \alpha_0 + AppPerf_{ij} + \varepsilon_i \tag{2}$$

Table4.8 Two-factor regression model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Glovo	0.829	0.687	0.584	0.34020
Meituan	0.846	0.716	0.673	0.27792

Source: Author rersults (2024)

a Predictors: (Constant), Customer service, Navigation speed, Technology security, and Recommendation

b Dependent Variable: Customer Satisfaction

The findings from the two-factor regression models applied to Meituan in China and Glovo in Côte d'Ivoire reveal a robust positive correlation between the dependent variable (Customer Satisfaction) and the predictors (Customer service, navigation speed, technology security, and recommendation). Both models exhibit substantial R and R Square values, which indicate a noteworthy correlation between the aforementioned factors.

The R value for Glovo is 0.829, and the R Square value is 0.687. These values indicate that the predictors account for approximately 68.7% of the variation in Customer Satisfaction. The Adjusted R Square value, which takes into consideration the number of predictors in the model, is 0.584. The standard error of the estimate represents the mean deviation between the regression line and the observed values, with a value of 0.34020.

In contrast, Meituan exhibits a marginally greater R value of 0.846 accompanied by a R Square value of 0.716. These values suggest that the predictors account for approximately 71.6% of the variance in Customer Satisfaction. The obtained Adjusted R Square value of 0.673 indicates that the model fits the data quite well. Based on the standard error of the estimate of 0.27792, it can be inferred that the model's ability to predict Customer Satisfaction for Meituan may be more precise than for Glovo. In general, both models demonstrate a robust correlation between the predictors and Customer Satisfaction; however, Meituan's model may offer marginally superior predictive accuracy.

Table4.9 Two-factor model coefficients

Delivery App		Unstandardized Coef.		Standardized Coef.	t	Sig.
		B	Std. Err			
Meituan	Constant	0.916	0.167		5.479	0.000
	App Performance	0.633	0.058	0.442	11.004	0.000
Glovo	Constant	1.897	0.191		9.931	0.000
	App Performance	0.416	0.064	0.279	6.480	0.000

Source: Author research (2024)

a Predictors: (Constant), Performance

b Dependent Variable: Customer Satisfaction

The standardized coefficients in a two-factor model indicate the magnitude and direction of the association between the variables under consideration. The variables in this instance are two distinct delivery applications: Meituan and Glovo.

Meituan has a standardized coefficient of 0.442, suggesting a more pronounced positive correlation when compared to Glovo. This indicates that changes in the outcome variable under investigation are more strongly correlated with an increase in the usage or prominence of Meituan.

Conversely, the standardized coefficient for Glovo is 0.279, signifying a positive correlation that is albeit less pronounced in magnitude when compared to that of Meituan. This implies that Glovo remains positively correlated with changes in the outcome variable; however, the magnitude of its influence may be comparatively weaker than that of Meituan.

In summary, the findings of this research especially Table 4.8 and Table 4.9 indicate that Meituan might exert a more pronounced effect on the outcome variable, or impact, than Glovo within the scope of the investigation. Then, our fourth hypothesis is confirmed.

Hypothesis 4: Meituan's delivery system performance has a greater impact on customer satisfaction compared to Glovo Côte d'Ivoire.

4.3.4 Diagnostic Tests
4.3.4.1 Multicollinearity Test

Table4.10 Multicollinearity Test

Model	Delivery App		Collinearity tatistics	
			Tolerance	VIF
One-factor	Glovo	Constant		
		Customer service	0.484	2.067
		Navigation speed	0.345	2.895
		Technology security	0.564	1.773
		Recommendation	0.791	1.264
	Meituan	Constant		
		Customer service	0.384	2.604
		Navigation speed	0.383	2.609
		Technology security	0.126	7.948
		Recommendation	0.126	7.918
Two-factor	Glovo	Constant		
		App Performance	1.000	1.000
	Meituan	Constant		
		App Performance	1.000	1.000

Source: Author result (2024)

The multicollinearity test shows that there is a moderate level of collinearity among the independent variables in the model. Specifically, the variables of customer service and navigation speed have a collinearity tolerance below 0.5, indicating a higher degree of correlation between these variables. The variance inflation factor (VIF) values for each variable are all below 5, which is generally considered acceptable [188]. Overall, while there is some collinearity present in the model, it does not appear to be severe enough to warrant concern.

In relation to Meituan, the outcomes of the multicollinearity test indicate the presence of collinearity among the model's independent variables. The variables of technology security and navigation speed appear to be highly correlated, as their high VIF values and low collinearity tolerance indicate. This suggests that the model might contain superfluous data and that the variables are delivering comparable information. While the outcomes indicate that the variables in both models do not exhibit significant instances of multicollinearity, they also validate that Meituan's delivery performance system is exceptionally strong. This is attributed to their real-time computing platform, which prioritizes security, usability, and stability in addition to delivery. Furthermore, this platform plays a critical role in supporting business data warehouses. Meituan is performing well, and their consumers are more satisfied than those of Glovo Cote d'ivoire. Furthermore, the variance inflation factor is greater, as Meituan-Dianping had its initial platform built on Apache Storm in 2016. Spark Streaming was introduced by Meituan-Dianping in early 2017 for specific use cases, primarily data synchronization. Meituan-Dianping integrated Flink into its real-time computing platform towards the end of 2017. Flink possesses numerous benefits in comparison to Spark Streaming and Apache Storm, according to several studies [189]. Meituan-Dianping undertook a comprehensive platform-oriented system restructuring at this juncture, with a particular emphasis on security, stability, and usability. Meituan-Dianping has been dedicated to assisting organizations with machine learning and real-time data warehouse solutions since 2019. Côte d'Ivoire is implementing the measures that we did in response to a substantial increase in the development time for one of our microservices. They anticipate that by simply including explicit types in java.Map definitions, we will be able to reduce our build time by 30%. This reduction is intended to assist them in enhancing their delivery system and elevating customer satisfaction.

4.3.4.2 Normality test

One-factor model

Two-factor model

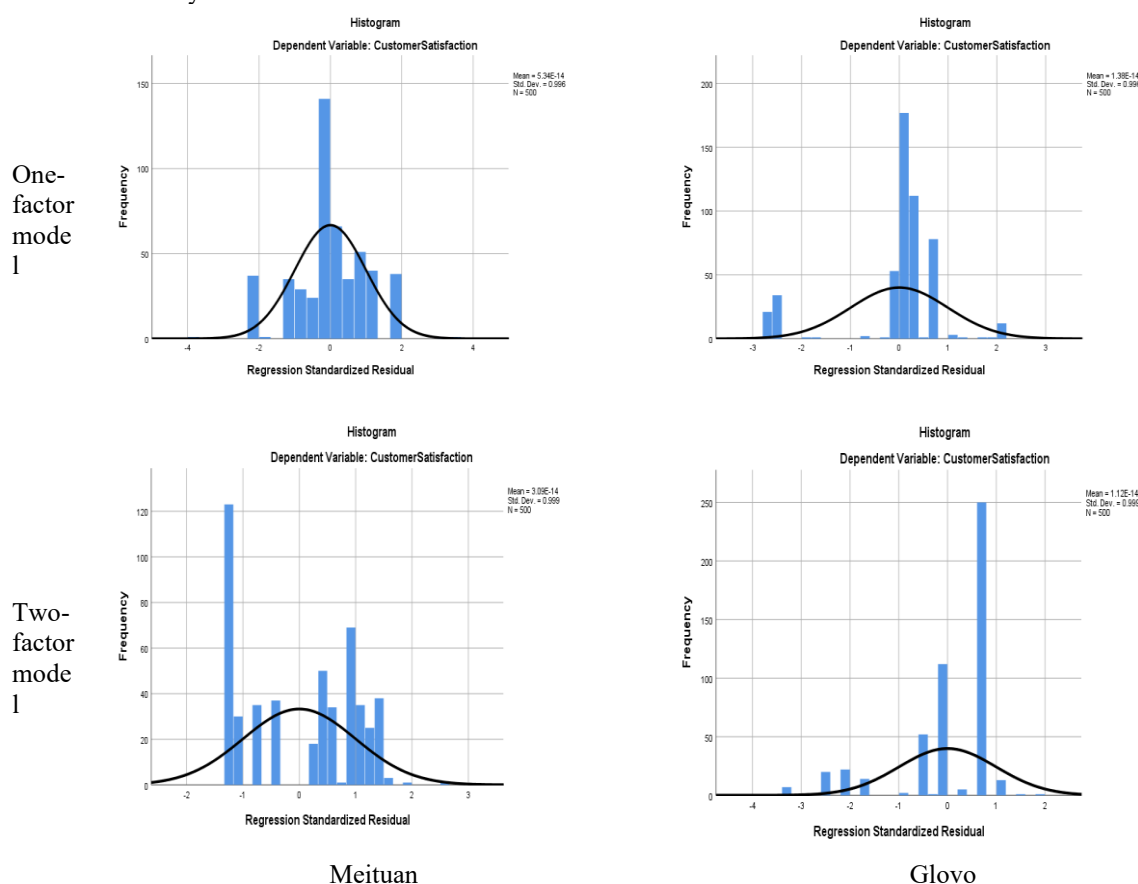Meituan   Glovo

Figure4.5 Normality test

Source: Author results (2024)

According to the graphs, the distribution of the series is closer to a normal distribution when using the one-factor model compared to the two-factor model. The one-factor model more accurately depicts the distribution of the data in this specific test for normalcy. The one-factor model pertains to customer satisfaction. This normalcy test reaffirms that the level of customer satisfaction among Meituan customers in China is higher than that of Glovo customers in Côte d'Ivoire.

As shown in Figure 4.5, the two-factor model primarily assesses delivery system performance. The normality test indicates that Meituan's delivery system performance is superior to that of Glovo. The satisfaction of Meituan's customers may be attributed to the high performance of their delivery system, which is achieved by the use of advanced technology such as their "All in One Solution" this all-in-one solution provides users with a data development platform and a metadata management platform [190] and the quality of their staff. According to , technology has a significant influence on company performance and staff productivity, ultimately resulting in increased consumer satisfaction.

4.4 Benchmarking the delivery systems of Meituan in China and Glovo in Côte d'Ivoire

Benchmarking the delivery systems of Meituan in China and Glovo in Côte d'Ivoire involves comparing various aspects such as delivery speed, delivery coverage, customer service, and technology integration. Here is a comparison of the two delivery systems:

1. Delivery speed:

Meituan is known for its fast and efficient delivery service in China. It has a large fleet of delivery riders and utilizes advanced technology to optimize delivery routes and reduce delivery times. Customers in China can usually expect their orders to be delivered within 30-45 minutes.

Glovo in Côte d'Ivoire offers delivery services, but the delivery speed may vary depending on the location and time of day. In general, customers can expect their orders to be delivered within 60 minutes to an 1hour and 45minutes.

2. Delivery coverage:

Meituan has a wide delivery coverage in China, covering most major cities and urban areas. It has partnerships with thousands of restaurants and stores, offering customers a wide range of options for food delivery, grocery delivery, and more.

Glovo in Côte d'Ivoire has been expanding its delivery coverage in the country, but it may not be as extensive as Meituan's coverage in China. However, Glovo offers delivery services for a variety of products, including food, groceries, and pharmaceuticals.

3. Customer service:

Meituan is known for its reliable customer service in China, with a dedicated customer support team that can assist customers with any issues or concerns they may have. Meituan also has a user-friendly app that allows customers to track their orders in real-time and communicate with the delivery rider.

Glovo in Côte d'Ivoire provides a medium customer service, with a low customer support team that struggle sometimes to help customers with any questions or problems. Glovo's app also allows customers to track their orders but with difficulties someties.

Technology integration:

Meituan utilize advanced technology to improve their delivery services. Meituan uses algorithms and data analytics to optimize delivery routes and predict demand, while Glovo uses a non-advanced technology approach to ensure efficient and timely deliveries.

V.   Research conclusions and prospects
5.1 Conclusions

5.1.1 Meituan in China

In conclusion, following the application of Confirmatory Analysis Factor (CFA), One-factor model, Two-factor model, and one- and two factor regression analysis on the basis of our variables, it is apparent that the performance of the delivery system is a critical determinant in guaranteeing customer satisfaction for Meituan in China. By employing sophisticated technologies like Flink, which provides assistance and real-time tracking of shipments, Meituan has achieved notable enhancements in its delivery operations, culminating in increased levels of client contentment.

A critical determinant in the efficacy of Meituan's dispatch system is its capacity to furnish customers with immediate updates pertaining to the whereabouts of their orders. Meituan utilizes Flink to enable real-time tracking of delivery driver locations, thereby providing customers with precise information regarding the arrival time of their orders. By maintaining a high degree of transparency and efficiency throughout the delivery process, Meituan not only improves the overall customer experience but also fosters confidence and trust as a dependable service provider.

Furthermore, Meituan distinguishes itself from market competitors through its dedication to delivering exceptional customer service. Fifty percent of Meituan's respondents indicated that they would recommend the company's services to others. Meituan provides responsive customer support to resolve any issues or concerns that customers may have, in addition to ensuring timely delivery. Meituan has successfully cultivated a devoted clientele and earned a favorable standing within the sector by placing a premium on service quality and positioning contentment as its foremost objective.

Customer satisfaction is additionally enhanced by Meituan's competitive pricing strategy, which is in addition to its exceptional delivery and customer service. Meituan guarantees that its customers obtain value for their money by providing an extensive selection of cuisine and services at justifiable prices. Due to its affordability, convenience, and high quality, Meituan is a popular option among Chinese consumers.

Overall, the success of Meituan in China can be attributed to its focus on delivering exceptional service through a reliable and efficient delivery system. By incorporating advanced technology, prioritizing customer satisfaction, and maintaining competitive prices, Meituan has been able to differentiate itself in the market and consistently meet the needs and expectations of consumers.

In conclusion, the delivery system performance of Meituan in China has a significant impact on customer satisfaction, driving the company's success and growth in the competitive market. By continuing to prioritize service quality, innovation, and customer-centric strategies, Meituan is well-positioned to sustain its leadership and continue to delight customers in the future.

5.1.2 Glovo in Côte d'Ivoire

Concerning the Glovo case, our research indicates that customer contentment is not significantly impacted by the efficacy of Glovo's delivery system in Côte d'Ivoire. Notwithstanding the dearth of sophisticated technology and streamlined delivery infrastructure, customers in Côte d'Ivoire express contentment with Glovo's services owing to the limited availability of alternative food delivery alternatives in their vicinity. In reaching this conclusion, we have validated the constructs using the goodness of fit (GoF), a structural modeling equation.

Java.map, which may not be the most sophisticated or dependable system, is utilized for real-time delivery tracing, which is a significant factor in this dearth of alternatives. In addition, inadequate customer service that

fails to meet customers' expectations contributes to a subpar experience. Moreover, the cost of Glovo's services surpasses the means of certain clients in Côte d'Ivoire, thereby diminishing the platform's appeal even further.

In brief, the problem of Glovo's delivery system in Côte d'Ivoire is the difficulty of respect the delivery time as planned, thus driving the company to low success in the highly competitive industry. However, Glovo might sustains its leadership position and ensures consistent consumer satisfaction through the implementation of customer-centric strategies, innovation, and service quality.

5.1.3 Summary of conclusions and contributions

This section provides a summary of the findings on the effect of delivery system performance on customer satisfaction for the two companies under investigation, using distinct methodologies and technology.

Meituan, a Chinese company, attributes its customers satisfaction to the success of their delivery system, which relies on advanced technology like Flink to provide real-time tracking and updates on deliveries. This level of openness improves client confidence and enriches their whole experience. Meituan prioritizes providing excellent service, which encompasses prompt customer assistance and a pricing approach that guarantees good value for the price. The company's commitment to delivering high-quality service, together with its focus on technical advancement, establishes a strong position in a competitive industry, resulting in growth and a strong market presence.

Meanwhile, in Côte d'Ivoire, Glovo's customer satisfaction seems to be less dependent on the effectiveness of its delivery system compared to Meituan. The usage of Java.map for tracking, despite the restricted technology and infrastructure, does not greatly affect customer satisfaction, mostly because there are no other viable options available. Nevertheless, deficiencies such as poor customer service and cost that surpasses the financial capabilities of some clients diminish the overall attractiveness of the business.

To summarize, Meituan uses sophisticated technology and high-quality service to enhance customer happiness and achieve market success in China. On the other hand, Glovo's influence in Côte d'Ivoire is limited due to the absence of other options, despite its technical and service deficiencies.

Concerning the contribution, the research used Structural Equation Modelling using Smart PLS, which includes Confirmatory Factor Analysis (CFA), to assess the effectiveness of delivery methods and their relationship with customer satisfaction. These approaches have been important in assessing the reliability and validity of the measurement models, including both one-factor and two-factor models.

This study validates the effectiveness of SEM (Structural Equation Modeling) in assessing business models in diverse market environments, including both highly developed (China) and developing (Côte d'Ivoire) situations. The example of Meituan demonstrates the positive impact of making strategic investments in technology and customer service on both customer happiness and company success. On the other hand, the results obtained by Glovo in Côte d'Ivoire demonstrate the difficulties encountered by enterprises operating in areas that have insufficient infrastructure and technology.

This study also adds to the current body of literature by showcasing the practical implementation of Structural Equation Modelling (SEM) in real-life business situations. It establishes a basis for future research to investigate these dynamics in other developing markets, potentially providing insights for enhancing global delivery service strategies and customers satisfaction. In the following sections we will give some suggestions for both companies.

5.2 Recommendations for Meituan in China and Glovo in Côte d'Ivoire.

5.1.4 Meituan in China

As Meituan is already leading the market the world is already the era of AI we suggesting to meituan to implement AI. Meituan's online food service and dispatch system would reap numerous significant advantages from the integration of AI technology. One of the most notable benefits is the capacity to optimize delivery times and route planning. By employing AI algorithms, Meituan can determine the most efficient routes for its delivery couriers by analyzing a variety of factors, including weather conditions, order volume, and traffic patterns. This can contribute to the reduction of petroleum expenses and delivery times, which will ultimately enhance the consumer experience.

On Meituan's platform, AI technology can also be employed to optimize the consumer ordering process. By analyzing client data and preferences with machine learning algorithms, Meituan is able to provide customized promotions and recommendations to individual users. This can facilitate increased customer engagement and encourage recurrent business, which will ultimately result in increased customer loyalty and satisfaction.

An additional advantage of AI technology is its capacity to enhance the efficiency of supply chain operations and inventory management [192]. By analyzing sales data and predicting demand trends with the assistance of AI algorithms, Meituan is able to more accurately anticipate consumer demands and adjust its inventory levels accordingly. This can contribute to the reduction of waste, the mitigation of out-of-stock circumstances, and the timely delivery of customer orders.

In order to effectively incorporate AI technology into its online food service and delivery system, Meituan ought to adhere to several fundamental guidelines. Meituan should place utmost importance on the ethical and responsible implementation of AI technology. This encompasses the verification of the fairness, transparency, and accountability of its AI systems, as well as their adherence to pertinent regulations and guidelines.

Additionally, Meituan should invest in its employees' ongoing education and training to ensure that they are competent with AI technology [193]. Meituan can facilitate worker comprehension of the potential and constraints of artificial intelligence (AI), along with optimal utilization strategies for enhancing customer experiences, through the provision of comprehensive training programs and resources. In addition, Meituan ought to proactively solicit customer feedback regarding the integration of AI technology and attentively consider their apprehensions and inclinations. Meituan can ultimately increase customer loyalty and contentment by ensuring that its technology fulfills the requirements and anticipations of its clientele through a process of customer engagement in the development and testing of AI systems.

The potential of AI technology to substantially improve the delivery system and online culinary service of Meituan is considerable; as a result, customer loyalty and satisfaction may increase substantially. Meituan can implement AI algorithms to optimize route planning, enhance inventory management, and personalize customer recommendations, thereby achieving operational efficiency, cost reduction, and an overall improvement in the customer experience.

Nevertheless, Meituan must diligently contemplate the potential obstacles and constraints associated with AI technology, including but not limited to bias, data privacy, and adaptability. Meituan can effectively harness the complete potential of this revolutionary technology by incorporating AI into its operations in a judicious and ethical manner, as well as by allocating resources towards employee education and soliciting customer input. Meituan can further establish itself as a market leader in the fiercely competitive online food service sector with the implementation of the appropriate strategy.

5.1.5 Glovo Côte d'ivoire

In relation to the suggestions for Glovo CI, we do not advise them to advance to the next level in the same way that Meituan did by implementing AI. Instead, we propose that they draw inspiration from Meituan's model in China, which involves utilizing a Flink-based Real-time Data Warehouse Platform.

Glovo, a well-known on-demand delivery platform, has amassed considerable traction in Côte d'Ivoire due to its capacity to deliver an extensive selection of goods, including consumables, food, and more, directly to customers' doorsteps and satiate their cravings.

To guarantee punctual and precise deliveries while simultaneously satisfying the growing expectations of clientele, Glovo, located in Côte d'Ivoire, requires a resilient and effective data warehouse platform solution. Processing and analyzing data in real time is of the utmost importance in order to increase revenues, improve customer satisfaction, make well-informed decisions, and optimize operations. According to [194], a Flink-based real-time data warehouse platform has the potential to significantly transform Glovo's online food service and delivery system.

Flink is a robust real-time data processing framework that is open-source in nature. Its functionalities empower organizations to promptly and precisely analyze and respond to data streams. Flink's functionalities can be effectively utilized by Glovo in Côte d'Ivoire to optimize its online food service and dispatch system, thereby augmenting customer satisfaction.

The capability of a Flink-based real-time data warehouse platform to process and analyze massive amounts of data in real-time is one of its primary advantages. Due to the fact that Glovo processes thousands of orders daily, it is critical to have a data-processing platform that operates with speed and efficiency in order to maintain customer satisfaction and ensure on-time deliveries.

Flink will enable Glovo to conduct real-time analysis of data transmissions in order to detect anomalies, trends, and patterns that can be utilized to enhance the delivery system. Through the examination of customer behavior and preferences, Glovo is capable of optimizing its delivery routes, forecasting demand, and guaranteeing the timely and accurate availability of suitable products.

A further significant benefit of utilizing Flink is that its fault-tolerance guarantees the data warehouse platform's high availability and dependability. Downtime or data loss can have a substantial detrimental effect on Glovo's operations and customer satisfaction in Côte d'Ivoire. Consequently, this is of the utmost importance.

Flink will enable Glovo to consistently and uninterruptedly process data streams, irrespective of potential malfunctions or interruptions. This will permits Glovo to function uninterruptedly and provide its consumers with a dependable and consistent service.

Flink will provide capabilities for machine learning and predictive analytics, which can further improve the online food service and delivery system of Glovo, in addition to processing real-time data. Glovo will be capable of forecasting demand, optimizing inventory management, and customizing recommendations for consumers through the analysis of historical data and patterns.

As an illustration, Glovo will optimize delivery routes, forecast periods of high demand for deliveries, and propose customized menu selections in accordance with customer inclinations through the implementation of machine learning algorithms (World Health Organization, 2021). This may assist Glovo in increasing productivity, decreasing expenses, and enhancing consumer satisfaction.

In addition, the capability of Flink to integrate with a multitude of data sources and platforms offers Glovo a versatile and expandable resolution for data management. Flink can efficiently receive, process, and analyze data in real-time from various sources and streams, including Glovo's mobile app, website, and third-party sources.

This will enable Glovo to scale its data warehouse platform without investing in additional infrastructure or resources in tandem with its business expansion. By utilizing Flink's functionalities, Glovo is capable of efficiently and effectively managing substantial quantities of data, thereby guaranteeing the ongoing satisfaction of its customers through its online food service and delivery system.

In conclusion, a real-time data repository platform solution based on Flink has the potential to significantly enhance the online food service and delivery system of Glovo in Côte d'Ivoire. By capitalizing on Flink's functionalities pertaining to real-time data processing, analysis, and machine learning, Glovo can augment customer satisfaction, streamline operations, and stimulate business expansion.

Glovo will be able to personalize recommendations for its clients, identify patterns and trends, and forecast demand by utilizing Flink to analyze massive amounts of data in real time. By implementing this strategy, Glovo can guarantee a smooth and effective service, thereby fostering customer satisfaction and loyalty to its platform in Côte d'Ivoire [195]. By implementing a real-time data warehouse platform solution based on Flink, Glovo in Côte d'Ivoire will enhance its online food service operations, maintain a competitive edge, and deliver a more satisfactory customer experience. Flink will enable Glovo to optimize its processes and guarantee exceptional performance on each order, thereby fostering customer loyalty and encouraging repeat business.

5.2 Research limitations

This research uses two questionnaires forms to empirically analyze Delivery System Performance Effect on Customer Satisfaction. However, due to some subjective and objective factors, there are still shortcomings in this research.

1. Generalizability: The findings of this study may not be generalizable to other food delivery companies or other countries due to the specific focus on Meituan in China Wuhan City and Glovo in Côte d'Ivoire Abidjan City.

2. Sample size and representativeness: The sample size of the online questionnaires may not be large enough to accurately represent the population of customers in each country. Additionally, the sample may not be representative of the entire customer base of Meituan and Glovo in total the sample size is 1000.

3. Response bias: There is a possibility of response bias in online questionnaires, as some participants may provide inaccurate or incomplete information. This could affect the validity of the results.

4. External factors: There may be external factors such as economic conditions, competitors' actions, cultural differences government regulations that could have influenced customer satisfaction in each country, which were not accounted for in this study.

5.3 Research prospects

◆ Investigate the impact of external factors such as regulatory environment, competition, and economics conditions on the delivery system performance and customer satisfaction of Meituan and Glovo.

◆ Conduct a comparative analysis of the marketing strategies employed by Meituan and Glovo to attract and retain customers in their respective markets.

◆ Analyze data on customer retention rates and repeat purchases for Meituan and Glovo to assess the long-term effects of delivery system performance on customer loyalty.

◆ Investigating the challenges and opportunities faced by Meituan and Glovo in improving their delivery system performance to meet customer expectations.

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