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Research Article

Impact of Transportation Network Companies on Conventional Taxi Companies in Indonesia

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Abstract.

This research was conducted to determine the impact of disruptive innovations with the emergence of online-based transportation on conventional taxi companies in Indonesia. The method used is descriptive research with case studies on two taxi companies, namely PT. Blue Bird Tbk (BIRD) and PT. Express Transindo Utama Tbk (TAXI) during the period 2014-2022. The variables studied were operating income, operating profit/loss, stock prices, and bankruptcy predictions using the Springate model. The results show that the emergence of online-based transportation affects decreasing operating income, operating profit, and stock prices in both companies. The potential for bankruptcy also increases with decrease in income and operating profit. Nevertheless, BIRD can endure in the era of disruption by innovating in services and collaborating with online transportation companies. On the other hand, TAXI's efforts to innovate have not yielded results, leading to a lack of significant improvement signals in the company's performance. Adaptability, innovation strategies, and collaboration are identified as key factors for the success of conventional taxi companies in surviving the era of disruption.

Keywords: disruption era, online transportation, conventional taxis, bankruptcy

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1. Introduction

The emergence of online-based transportation in Indonesia since 2014 has led to significant shifts in user transportation behavior. Starting with the introduction of Uber Taxi and Grab Taxi, which offered more economical fares compared to traditional taxis, these companies collaborated with private vehicle owners through dedicated applications available on the Play Store or App Store. Registered vehicle owners could then offer their services to potential passengers through these applications. Competition intensified with the arrival of Gojek in early 2015, a local startup offering online motorcycle taxi services at substantially lower rates than conventional taxi fares at that time [1]. This sparked the growth of various similar companies, each with its advantages and disadvantages. Price wars ensued, both among online-based transportation services and with conventional transportation. By the end of 2019, Gojek and Grab emerged

as the dominant players in Indonesia, even attaining the coveted status of “Decacorn” startups, with valuations exceeding US$10 billion for Gojek and US$11 billion for Grab [2].

In mid-December 2019, Indonesian investors were intrigued by news of Gojek’s potential acquisition of a 5% stake in PT. Blue Bird Tbk (BIRD). Although the acquisition’s certainty remained uncertain, its impact was evident in the 27.1% increase in PT. Blue Bird’s stock price within a week [3]. This heightened investor optimism is reasonable, given the declining performance of conventional transportation companies since the rise of online-based transportation. The average revenue of taxi companies declined by 17.5% [4]. Among the traditional taxi companies listed on the Indonesia Stock Exchange (IDX) between 2014-2022 are PT. Blue Bird Tbk (BIRD) and PT. Express Transindo Utama (TAXI). In addition to declining revenues, both companies experienced a similar trend in their stock prices. BIRD’s shares dropped from around IDR 7,400 per share in November 2014 to approximately IDR 2,490 per share in December 2019, marking a decline of about 66.35% [5]. TAXI experienced a more severe drop, from IDR 1,156 per share in November 2014 to just IDR 50 per share in December 2019, the lowest limit on the IDX at that time. TAXI’s stock prices decreased by 95.67% from 2014-2019 [6].

For some, online-based transportation is a solution to Indonesia’s public transportation challenges, offering convenience, affordability, and safety. However, for others, it poses a threat that erodes established revenue streams. Demonstrations by traditional taxi drivers and conflicts with motorcycle taxi operators have emerged at the grassroots level due to financial concerns. At the corporate management level, the innovation of online-based transportation poses a unique threat to conventional transportation companies. Unpreparedness to face the technological disruption era may jeopardize a company’s sustainability. The continued deterioration of performance also potentially increases the risk of bankruptcy for conventional taxi companies. Innovation and hard work are required to endure the current era of disruption. Based on this background, this research aims to analyze the impact of the emergence of online-based transportation on conventional taxi companies in Indonesia and the strategies companies can employ to face competition in the era of disruption. The study focuses on two taxi companies, PT. Blue Bird Tbk (BIRD) and PT. Express Transindo Utama (TAXI), from 2014 to 2022, encompasses the introduction and evolution of online-based transportation in Indonesia. The research emphasizes four key aspects: Operational Revenue, Current Year Net Profit, Stock Prices, and Bankruptcy Prediction using the Springate method.

2. Literature Review

2.1. Disruptive Innovation

Disruptive Innovation can be defined as innovation that disrupts, a condition where technological innovations raise concerns or have negative impacts on the development of conventional businesses [7]. Innovation is considered disruptive if it introduces new technology that is cheap, easy, and more efficient than the previous expensive and inefficient technology. Additionally, innovation is deemed disruptive if it occurs in the same industry, causing disturbance to existing industry players. If the innovation does not directly disrupt an industry, it is not considered a disruptive innovation [8].

Disruptive innovation can be created through:

1. Creating a new market: Establishing a new market by leveraging opportunities with a basis of similarity in certain aspects.
2. Focus on a new market: Striving to meet the needs and allay concerns of customers by standardizing services.
3. Create and enhance value for users by providing the best subsidies: Price certainty and competitive rates add value to the company.
4. To be a local champion first and The National Champion soon: Seeking to provide solutions for a small (local) environment as a starting point to reach a broader [9].

Disruptive Innovation is a global phenomenon resulting from the development of information and communication technology. The innovations that have occurred have changed the perspectives of business players by providing better and more advantageous choices for consumers. These innovations cannot be and should not be restrained because an innovative market is a prerequisite for economic growth [7].

2.2. Bankruptcy

A company is deemed bankrupt if it is unable to settle its overdue debts, and declared bankrupt based on a court decision, either at its request or at the request of its creditors [10]. Bankruptcy is also a condition where a company no longer has the capability to carry out its operational activities effectively [4]. Bankruptcy is a state in which a company's liabilities exceed its assets, lacks sufficient capital, inadequate cash, poorly managed resources, inefficient management, declining sales, and market

conditions [11]. This condition can be detected earlier through financial reports analyzed carefully using a specific method. Financial ratios can be used as an initial indication of impending bankruptcy in a company [12]. There are several methods for predicting bankruptcy, including the Altman, Springate, Zmijewski, Foster, and Grover methods. Among these, the Springate method is the most accurate in predicting bankruptcy for transportation companies in Indonesia [4]. The Springate model was introduced by Gordon LV Springate in 1978 [13]. The ratios used in the Springate method can be formulated based on the following equation:

S = 1,03 A + 3,07 B + 0,66 C + 0,4 D

S = Springate-score (S-score)

A = Working Capital/Total Assets

B = Net Profit Before Interest and Taxes/Total Assets

C = Net Profit Before Taxes/Current Liabilities

D = Sales/Total Assets

The criteria used are as follows :

S-Score > 0,862 Indicates that the company is not experiencing bankruptcy

S-Score < 0,862 Indicates that the company is not experiencing bankruptcy [4]

2.3. Previous Research

Ride-hailing services have expanded globally, covering almost the entire world. Research conducted in various countries to assess the impact on the economy and companies in the respective countries generally yields varied results. In Taiwan, ride-hailing services (specifically Uber) initially led to a 12% decrease in the income of conventional taxi drivers in its first year, which then increased to 18% by the third year of Uber's operation in Taiwan [14]. In the United States, hourly wage-based taxi drivers employed by traditional taxi companies experienced a decline in income compared to ride-hailing drivers (Uber) who saw an increase in earnings. This negative impact did not extend to drivers in other transportation sectors, such as buses, trucks, tractors, or delivery services [15]. Research conducted in New York City indicated that the advent of Uber led to a reduction in conventional taxi fares, did not significantly affect the decrease in traffic congestion but expanded service areas previously unreachable by conventional taxis. Additionally, there was an increase in capital inflow through higher driver wages and lower passenger taxi fares [16]. Another study across five cities in the United States—Boston, Los Angeles, New York, San Francisco, and Seattle—revealed that

UberX drivers covered significantly longer distances in serving consumers compared to conventional taxi drivers [17].

In the Philippines, Transportation Network Companies (TNCs) like Uber and other ride-hailing apps, due to their sharing economy basis, are generally more affordable than conventional taxis. Moreover, they provide better service quality than conventional taxis [18]. Meanwhile, research conducted in several major cities in Indonesia indicated five main factors causing customers to switch from conventional taxis to ride-hailing services: pricing, core service failure, service encounters failure, employee response to service failure, and ethical problems [19]. Another study in Makassar City also showed that pricing was one of the advantages of ride-hailing services compared to conventional transportation and a source of conflict between the two [20].

3. Methodology

This research employs a descriptive research method to understand the impact of the emergence of ride-hailing services on conventional taxi companies in Indonesia. It also explores the strategies implemented by conventional taxi companies in facing these challenges. The data collection techniques include indirect observation and literature review. The obtained data are secondary data collected from internet media publications, the Indonesian Capital Market Directory (ICMD), and various other relevant supporting data for this research. The primary data consists of annual reports and financial statements of PT. Blue Bird Tbk (BIRD) and PT. Express Transindo Utama (TAXI) for the period from 2014 to 2022.

4. Result and Discussion

Financial Data from BIRD and TAXI companies for the period 2014-2019 are as follows:

From the above operational revenue data, it can be observed that, overall, the revenue of both companies continues to decline each year. There was an increase in 2015, but a consistent decrease occurred until 2019. The year 2015 marked the promotional period for ride-hailing companies in Indonesia, with Uber Taxi promotion in March and Grab Car in July 2015. Additionally, the introduction of online motorcycle taxi services by Gojek further pressured the operational revenue of conventional taxi companies. The impact of disruptive companies began to affect the operational revenue of taxi companies in 2016. The percentage decrease in revenue in 2016 compared to

Table 1: Performance Comparison for the Period 2014-2019.

	2014	2015	2016	2017	2018	2019
Operational Revenue (in million Rupiah)						
BIRD	4,758963	5,472,328	4,796,096	4,203,846	4,218,702	4,047,691
TAXI	889,723	970,093	618,207	304,712	241,664	134,251
Profit/(Loss) (in million Rupiah)						
BIRD	739,258	828,948	510,203	427,495	460,273	315,622
TAXI	118,899	32,322	(184,740)	(233,365)	(836,820)	(276,073)
Stock Price on Dec 31 (in full Rupiah)						
BIRD	9,425	7,100	3,000	3,460	2,870	2,490
TAXI	1,170	105	170	50	90	50

Source : Financial Statement and Annual Report

the previous year was BIRD -12% and TAXI -36%. During this period, 2019 was the year when both companies experienced the lowest operational revenue.

The profit/loss performance of both companies also correlates with their operational revenue. Comparatively, BIRD outperforms TAXI. Throughout the period, despite the decrease, BIRD remained profitable. TAXI had a good performance in 2014 and 2015, recording profits. However, from 2016 to 2019, TAXI continued to incur losses. In 2015, TAXI obtained a smaller profit compared to the previous year, even though operational revenue in 2015 was higher than in 2014. This indicates that the increase in operating expenses exceeded the increase in operational revenue, leading to a larger operating loss. In 2019, TAXI's performance began to improve with significantly lower losses compared to 2018. Management started to implement cost efficiency in operating expenses, adjusting to the still low revenue, although the profit remained negative.

The stock prices of both companies generally followed the trend of operational revenue and profit/loss performance. Both companies experienced significant declines in stock prices. BIRD's stock price on December 31, 2019, decreased by 74% compared to the price in 2014. TAXI's stock price had a more significant drop of 96% compared to 2014, and TAXI's stock was one of the stocks that reached the lowest limit on the Indonesia Stock Exchange in 2019, at IDR 50. The most noticeable fluctuation in BIRD's stock price occurred in the 2015 and 2016 period, where BIRD's stock price dropped by more than IDR 4,000 per share or a 58% decrease. In contrast, TAXI experienced the most significant decrease in the 2014 and 2015 periods, with TAXI's stock price at the end of 2014 at IDR 1,170 per share falling to IDR 105 per share, a 91% decrease.

The COVID-19 pandemic began impacting in March 2020, following the announcement of the first two Covid-19 patients in Indonesia. The implementation of Large-Scale

Table 2: Performance Comparison for the Period 2020-2022.

	2020	2021	2022
Operational Revenue (in million Rupiah)			
BIRD	2,046,660	2,220,841	3,590,100
TAXI	21,542	7,263	2,949
Profit/(Loss) (in million Rupiah)			
BIRD	(163,183)	8,720	364,027
TAXI	(53,222)	188,615*	(14,641)
Stock Price on Dec 31 (in full Rupiah)			
BIRD	1,300	1,380	1,410
TAXI	50	50	50

* Profit increased due to the cancellation of debt from creditors
Source: Financial Reports and Annual Reports

Social Restrictions (PSBB) reduced the mobility of the public, affecting all companies in the transportation sector, both ride-hailing and conventional. In 2020, both companies incurred losses, with BIRD experiencing the most significant decrease in operational revenue, almost 50% (precisely 49.44%) from 2019. The profit that BIRD had maintained from 2014 to 2019 turned into a loss in 2020. In 2021, the Delta variant of COVID-19 attacked Indonesia, and the economy, which began recovering in early 2021, suffered another setback. Then, in July 2021, the Indonesian government reintroduced restrictions on community activities. In 2021, BIRD managed to achieve a small profit.

Meanwhile, TAXI gained profits from the cancellation of debt from creditors worth more than IDR 169 billion and other income of around IDR 38.5 billion. The profit came from other income and the cancellation of debt because the company still experienced losses from its business activities. In 2022, it was a year of recovery for the transportation sector in Indonesia. This is evident from BIRD's operational revenue performance, which increased by 61.65% from the revenue in 2021. Conversely, in 2022, TAXI continued to experience a decline in revenue, and its operational revenue in 2022 was the lowest in the entire observation period. The increase in profit obtained by BIRD has driven a gradual increase in stock prices from IDR 1,300 per share in 2020 to IDR 1,410 per share in 2022. Meanwhile, TAXI has not experienced a change in stock prices since 2019.

From the processed data of S-scores above, overall, TAXI has the potential for bankruptcy from 2014-2022. The prediction of bankruptcy for the company continues to increase each year, with the lowest score being -2.672 obtained in 2020. This score is far below the minimum Springate score of 0.862 [4]. An exception occurred in 2021 due to an increase in profit from the cancellation of debt from creditors, amounting to

Table 3: Springate Score for the Period 2014-2022.

	2014	2015	2016	2017	2018	2019	2020	2021	2022	Mean
BIRD	1.221	1.562	1.210	1.497	1.247	0.802	-0.190	0.335	0.859	**0.949**
TAXI	0.662	0.546	-0.578	-1.218	-2.917	-2.440	-2.672	17.376*	-0.918	**0.871**

*profit increased due to the cancellation of debt from creditors
Source: Data processing, 2023

more than IDR 169 billion, and other income of around IDR 38.5 billion, causing the score to soar to 17.376. As for BIRD, the average S-score is still above 0.862, indicating a low potential for bankruptcy. The decline in BIRD's performance began in 2019 until 2021. BIRD's performance in 2022 has started to improve, as evidenced by the increase in the score from 0.335 in 2021 to 0.859 in 2022. If BIRD's management continues to maintain good performance in the future, the risk of bankruptcy can be reduced, and the company will grow healthier. Overall, the main cause of the low S-score in both companies is the decline in revenue and profit.

The era of disruption has had an impact on the performance of conventional taxi companies. The presence of ride-hailing transportation has influenced the decline in revenue and profit of these companies. The unpreparedness of company management to face the rapidly occurring technological era has reduced investor confidence, causing a decline in stock prices. The advantages of ride-hailing transportation, such as convenience, transparency, safety, comfort, and especially pricing, promotions, and discounts, have caused consumers to switch from conventional taxis. It is practical because it uses an application via a smartphone that is easily accessible. Transparency from the driver's side, fare, and destination route. Safety is guaranteed by the application provider and insurance. Comfort because consumers do not feel like using public transportation but rather like driving with a personal driver and car. Competitive pricing, along with various attractive promotions and discounts offered by the application providers [20,21].

From the Government's perspective, the absorption of a considerable workforce in the ride-hailing transportation business has been helpful. For driver-partners, ride-hailing has provided additional income or even become the main source of income. In reality, conventional taxi companies have implemented various methods to survive in the competition within the transportation service. This includes creating independent ride-hailing service applications, as well as collaborating with existing ride-hailing application companies. For example, BIRD collaborated with Gojek. Service improvements have also been made through the renewal of transportation fleets, improving the behavior of taxi drivers, and adjusting fares. However, intense competition in transportation services is not only from ride-hailing but also from other mass transportation in large

cities such as Mass Rapid Transit (MRT), Light Rail Transit (LRT), Commuterline, and Transjakarta. Changes in consumption patterns among millennials and Generation Z are also challenges that conventional taxi companies must face.

This research, along with previous research by [20] and [22], concludes that there are several steps that transportation companies can take to survive. These include mutually beneficial collaborations and partnerships by embracing all stakeholders, including the government, to build a well-integrated transportation network. Implementing competitive yet profitable fares for both the company and customers. Effective and efficient cost management. Utilizing information and communication technology, such as developing applications by taxi companies. And becoming pioneers in driving safety and security while providing excellent service.

5. Conclusion

Based on the research results, the impact of the disruptive era with the emergence of ride-hailing taxis has decreased the performance of conventional taxi companies. The decline is evident in operational revenue, operating profit, and stock prices. The research also indicates that the decrease in revenue and operating profit has increased the potential for bankruptcy in both companies. Innovation in technology and services is needed to retain conventional taxi customers. Collaboration with the government, ride-hailing application providers, and other stakeholders is essential to collectively build an integrated transportation system with a spirit of cooperation rather than mutual competition. Increasing revenue accompanied by efficiency in operating expenses is suggested as a solution to withstand the potential bankruptcy in the future. This research has limitations, namely, it only involves two conventional taxi companies as samples. Additionally, the performance of companies is assessed only based on operational revenue, operating profit, stock prices, and bankruptcy potential using the Springate method. Suggestions for future researchers include incorporating other variables to measure performance and bankruptcy potential, as well as using a broader sample for more accurate and comprehensive results.

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