

# From Taxi Stands to Smartphone Screens: The Future of Traditional Taxi Services in Southeast Asia's E-Hailing Economy

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DOI: <https://doi.org/10.5281/zenodo.23684389>

Published Date: 21-October-2026, Amendment Date: 27-October-2026

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**Abstract:** E-hailing platforms have changed the way passengers in Southeast Asia find, book and pay for a ride, and conventional taxi operators now compete against services that offer real-time tracking, upfront fares, cashless payment and two-way ratings. This paper examines where that competition leaves the traditional taxi and asks whether its future is one of resistance, replacement or adaptation. The study is a qualitative narrative review of peer-reviewed and institutional sources published between 2020 and 2026, with emphasis on Southeast Asian transport markets, platform governance and driver livelihoods. The evidence shows that platform entry has cut into the demand base of operators who stayed offline, most sharply where drivers lacked digital access, while also revealing uneven regulation, cost structures and bargaining power across the two business models. Passenger studies nonetheless indicate that taxis and e-hailing can coexist when each meets distinct needs. Conventional operators retain real advantages in regulated ranks, airport and hotel services, accessible vehicles, corporate accounts and locally trusted brands. The paper argues that a hybrid mobility market is a more credible outcome than the disappearance of the taxi. It proposes a four-part transition framework built on digital access, service differentiation, institutional cooperation and inclusive regulation, together with indicators for tracking progress. The paper adds a regional perspective to debates on platform competition and the future of urban passenger transport.

**Keywords:** Traditional taxis; e-hailing; ride-hailing; Southeast Asia; platform economy; urban mobility; digital transformation; transport regulation.

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## I. INTRODUCTION

Across Southeast Asia, getting a ride in a city now usually begins on a phone. E-hailing platforms connect passengers and drivers through applications that combine location services, automated matching, fare estimates, electronic payment and rating systems. These features have reset what passengers regard as convenient. A traveller expects to see the car approaching, know the driver's name and the price before the door opens, and pay without handling cash. Operators of conventional taxis, many of whom still rely on street hails, ranks and telephone dispatch, have had to reconsider how they reach customers and how they organise their fleets.

The contest is not simply between old cars and new apps. It involves different business models, licensing categories and relationships among drivers, fleet owners and passengers. A regional review of ride-hailing research identifies effects on travel demand, driver supply and public agencies, and points to unresolved questions about licensing, fare setting, safety and the place of app-based services in urban transport planning (Chalermpong et al., 2023). Market consolidation has added a further layer. After Grab acquired Uber's regional business in 2018, Singapore's competition authority found that the merger substantially lessened competition and imposed financial penalties on both firms (Healey, 2020). Platform algorithms now shape task allocation, pricing and worker evaluation across the region (Tan & Gong, 2024).

Against this background, the paper addresses three questions: (1) how has e-hailing changed the competitive position of traditional taxi services in Southeast Asia; (2) which capabilities can help conventional operators remain relevant; and (3) which regulatory and institutional measures can support a fair transition? The study does not report new survey data. Its contribution is a practical framework for interpreting taxi adaptation in a region where digital infrastructure, income levels and transport regulation differ considerably from one city to the next.

## **II. REVIEW APPROACH AND CONCEPTUAL CONTEXT**

### **A. Review Method**

The paper synthesises peer-reviewed studies and institutional reports published from 2020 to 2026 on ride-hailing in Southeast Asia, competition between taxis and platforms, platform work and algorithmic management. Sources were identified through bibliographic databases and the publication pages of international organisations, and were read thematically rather than pooled statistically. Five themes structured the analysis: competitive pressure, passenger experience, driver livelihoods, regulation and the strategic future of conventional taxis. Because the review is narrative, its conclusions are an analytical synthesis and should not be read as a systematic estimate of market size or job losses.

### **B. Platforms as Digital Intermediaries**

E-hailing platforms create value by coordinating passengers and available drivers, lowering search costs and using trip data to improve matching. Tirachini (2020), in an international review, shows that the effects of ride-hailing on car use, public transport and congestion depend heavily on local conditions, which cautions against importing conclusions from one city to another. Coordination at this scale also gives platforms considerable power over the terms on which drivers work. Kellogg et al. (2020) describe how algorithms direct, evaluate and discipline workers through mechanisms such as restricting, recommending, recording, rating, replacing and rewarding. The International Labour Organization (ILO, 2021) reaches a similar conclusion for digital labour platforms more generally, noting income volatility, limited social protection and algorithmic control alongside new earning opportunities.

### **C. The Diversity of Traditional Taxi Services**

The traditional taxi is not a single model. The category includes owner-drivers, fleet operators, radio-dispatched services, rank-based taxis, airport concessions and, in several cities, motorcycle taxis and auto-rickshaws. Their ability to compete depends on fleet age, licensing costs, dispatch systems, access to high-demand locations, reputation and the capacity to adopt digital tools. The boundary between the two models is also blurring. Many taxi firms now run their own booking apps, and platforms list licensed taxis alongside private-hire cars. Vega-Gonzalo et al. (2024) accordingly distinguish street-hailed taxis, app-booked taxis and private-hire ride-hailing as separate modes with distinct adoption patterns. In Bangkok, Sopranzetti (2022) shows that the arrival of apps reshaped long-standing arrangements among motorcycle-taxi drivers, officials and users rather than simply replacing them.

## **III. COMPETITIVE PRESSURES ON TRADITIONAL TAXIS**

### **A. Passenger Expectations and Digital Convenience**

Passengers increasingly expect to see vehicle details, an estimated fare, the driver's location and the arrival time before committing to a trip. These cues reduce uncertainty and make services easier to compare. Survey evidence from Vietnam shows that the perceived benefits of the booking app, sales promotions and service quality each influence satisfaction and loyalty among ride-hailing users, with service quality having the strongest effect (Nguyen-Phuoc et al., 2020). A later study found that both the booking app and the quality of service after booking shape whether passengers continue using a platform and recommend it to others (Nguyen-Phuoc, Vo, et al., 2021). A taxi that offers only a kerbside hail or a telephone line cannot easily match that level of information.

### **B. Market Access and Network Effects**

Platforms gain from network effects. More passengers attract more drivers, and a larger pool of drivers shortens waiting times, which in turn attracts more passengers. Consolidation has concentrated this advantage in a small number of regional firms (Healey, 2020; Tan & Gong, 2024). For an independent taxi company, the difficulty is less about efficiency than about visibility, because a growing share of demand is now discovered and routed through a handful of apps. Modelling work on platform-taxi competition indicates that platform pricing strategies and the form of government supervision jointly affect how demand is divided between the two sectors (Zhong et al., 2022).

### **C. Evidence of Disruption and Uneven Adaptation**

The clearest regional evidence of disruption concerns operators who remained offline. A survey of 177 auto-rickshaw drivers in Phnom Penh who had not joined any app recorded falls of 47.7% in daily trips, 47.6% in daily passengers and 43.2% in monthly revenue after ride-hailing arrived, yet most respondents still had no intention of adopting an app (Phun

et al., 2020). Because the study covers a specific form of local transport, its figures should not be generalised to every taxi market. It does show how quickly income can erode when incumbents lack a digital channel. The World Bank (2025) reports a related pattern in Viet Nam, where ride-hailing apps raised the incomes of informal motorbike drivers by about 20% while traditional taxi drivers experienced weaker job security and earnings. Participation in a platform is not, however, a guaranteed remedy, and Shr and Chang (2024) show that the business effects of taxi drivers joining digital ride-hailing need to be assessed empirically rather than assumed.

#### ***D. Driver Livelihoods and the Employment Relationship***

The transition also changes the position of drivers. Platform work can widen access to customers and allow flexible hours, but drivers typically have little influence over fares, incentives or account decisions. Tan and Gong (2024) document how opaque algorithmic management in Southeast Asia deepens information asymmetry and limits drivers' ability to contest decisions, while the ILO (2021) and Dewan and Kashyap (2026) raise wider concerns about earnings, work intensity and social protection in app-based transport. Conventional taxi drivers face a different set of risks, including vehicle loans, daily rental payments to fleet owners and a shrinking street-hail market. Neither model can be assumed to deliver decent work on its own.

#### ***E. Regulatory Asymmetry***

Governments in the region have responded to ride-hailing in markedly different ways, and regulatory approaches still vary considerably from one country to the next (Ratanawaraha & Thaithatkul, 2024). Icasiano and Taeihagh (2021) show that the risks of ridesharing in Southeast Asia, including safety, data, labour and competition concerns, have been governed through a mix of adaptive and reactive measures. Where taxis remain bound by fixed meters, quotas and vehicle-age rules that do not apply equally to platform vehicles, incumbents compete under heavier obligations. Incumbent industries have also used regulation defensively; a study of the Brussels taxi sector traces how operators combined enforcement, discursive and mobilisation tactics to resist Uber's entry (Distelmans & Scheerlinck, 2024). Such resistance can delay change, but it rarely restores lost demand.

### **IV. STRATEGIC FUTURE FOR TRADITIONAL TAXI SERVICES**

#### ***A. Digital Integration Rather Than Imitation***

Conventional operators should give priority to a small set of practical digital functions: online booking, dispatch optimisation, upfront or estimated fares, electronic receipts, cashless payment and customer feedback. A taxi firm does not need to reproduce every feature of a regional super-app. It needs a dependable way for passengers to find and book its vehicles. Passenger research from Vietnam is encouraging on this point, since the perceived benefits of the booking method were among the strongest drivers of loyalty for taxi users (Nguyen-Phuoc, Tran, et al., 2021). Shared booking platforms or cooperative apps can spread development costs across small operators who could not build such systems alone.

#### ***B. Competing Through Differentiated Services***

Taxis can build value in segments where trust, accountability and specialised service matter more than the lowest fare. These include airport transfers, hotel and tourism contracts, corporate travel, school and healthcare transport, wheelchair-accessible vehicles and pre-booked journeys. Professional driver training, clear complaint handling, clean vehicles and predictable standards make these segments less exposed to price competition. A strategic analysis of an Indonesian taxi company identified its distribution network in major cities as its main strength and recommended service innovation, wider networks, better customer interaction and the use of data and analytics as the core of its transformation (Abdullah et al., 2023).

#### ***C. Partnerships and Data Capability***

Taxi associations, fleet owners, hotels, airports and local authorities can cooperate on booking systems, designated pick-up zones and common service standards. Aggregated trip data can help operators anticipate demand peaks and position vehicles more efficiently. In Bangkok, car and motorcycle ride-hailing were found to complement each other, with motorcycle services used frequently as feeders to urban rail (Thaithatkul et al., 2023), which suggests that integration with public transport is another route to relevance. Data practices must nonetheless be proportionate, secure and transparent. Small operators should not be drawn into partnerships that transfer their customer relationships or sensitive driver information to a dominant platform without safeguards.

#### **D. Regulation and a Level Playing Field**

Regulation should target equivalent risks and public outcomes rather than protect one business model because it is older. Passenger safety, insurance, vehicle condition, driver competency, fare transparency and complaint resolution ought to be handled consistently across taxis and e-hailing vehicles (Icasiano & Taeihagh, 2021; Ratanawaraha & Thaithatkul, 2024). Policymakers also need to recognise that platform algorithms shape working conditions in ways traditional licensing never anticipated. The ILO (2021) calls for regulatory coherence and fair competition in digital labour markets, and Dewan and Kashyap (2026) argue that platform governance in Asia and the Pacific requires stronger labour and social protection supported by social dialogue.

#### **E. A Transition Framework**

Drawing these strands together, a realistic transition can be organised around four linked capabilities, summarised in Table I. Digital access allows customers to locate and book taxis. Service differentiation lets operators compete on reliability and specialised needs. Institutional cooperation helps smaller firms share technology and market access. Inclusive governance ensures that drivers and passengers both benefit from transparent rules. Progress should be measured through outcomes such as booking conversion, waiting time, repeat use, complaints, driver net income and safety records, rather than app downloads alone.

**TABLE I: TRANSITION FRAMEWORK FOR TRADITIONAL TAXI SERVICES**

| Capability                | Strategic focus                                                                           | Indicative measures                                                 |
|---------------------------|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| Digital access            | Online booking, dispatch, upfront fares, cashless payment, e-receipts                     | Booking conversion; average waiting time; share of app-booked trips |
| Service differentiation   | Airport, hotel, corporate, accessible and pre-booked segments; driver training            | Repeat use; contract renewals; complaint rate                       |
| Institutional cooperation | Shared booking platforms, pick-up zones, links to public transport, responsible data use  | Partner coverage; cost per booking; first-mile and last-mile trips  |
| Inclusive governance      | Equivalent safety rules, fare transparency, algorithmic accountability, social protection | Driver net income; safety incidents; dispute resolution time        |

### **V. DISCUSSION**

The evidence points to a future in which the traditional taxi neither survives unchanged nor disappears. E-hailing has made digital access central to winning customers, and operators who ignored that shift lost ground quickly (Phun et al., 2020; World Bank, 2025). A taxi, however, remains a physical service. Passengers still need safe vehicles, trained drivers and someone accountable when things go wrong, and these needs leave room for firms that pair professional standards with digital convenience. Passenger research supports this view. Nguyen-Phuoc, Tran, et al. (2021) found that taxi and ride-hailing users form loyalty through partly different routes and described the two services as complementary and co-existing.

The most serious strategic error would be to treat technology adoption as an end in itself. An operator can launch an app and still struggle if its service is unreliable, its costs are high or its drivers are poorly supported. Conversely, a well-run taxi company with strong airport, tourism or accessible-transport relationships may remain viable without competing for every short urban trip. The relevant question is which passenger needs an operator can meet better than its rivals, and how digital tools can make that value easier to reach.

The available evidence has limits. Southeast Asia includes cities with very different public transport systems, income levels, vehicle types and regulatory histories. The Phnom Penh study cannot stand for every market, and regional reviews show uneven coverage of countries and stakeholder groups (Chalermpong et al., 2023). Comparative research is needed on taxi firms that have adopted digital booking, on driver net earnings after vehicle and platform costs, and on how platform partnerships affect market concentration over time.

## VI. CONCLUSION

E-hailing has moved the point of competition in Southeast Asian passenger transport from the taxi stand to the smartphone screen. Digital matching, live tracking, electronic payment and platform network effects have raised passenger expectations and put conventional operators under sustained pressure. The impact has been heaviest for drivers and small firms with limited access to technology, capital or institutional support. Yet the evidence does not justify predicting the end of the traditional taxi. Conventional services keep genuine advantages in regulated pick-up points, pre-booked journeys, corporate and tourism contracts, accessible transport and trusted local brands.

The future of the sector will depend on whether operators can combine digital convenience with professional service. Taxi firms should adopt affordable booking and dispatch tools, develop differentiated market segments, work with other transport stakeholders and handle data responsibly. Governments should apply consistent safety and service requirements to all operators while addressing the particular power of platform algorithms and the social protection needs of drivers. The most credible outcome is a mixed mobility ecosystem in which taxis and e-hailing services compete, cooperate and serve different passenger needs. Longitudinal studies across Southeast Asian cities, tracking demand, costs, driver welfare and passenger satisfaction, would allow this prediction to be tested.

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