Comparative Market and Industry Analysis of Traditional Taxi Services and Transportation Network Vehicle Services in Metro Manila

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Amidst its highly contested entrance into the Philippine market, Transportation Network Vehicle Services (TNVS) have significantly affected the life of the typical Metro Manila commuter. This study aimed to contextualize the consumer decision process behind the selection of private land transportation options among Metro Manila users, in order to direct policy discourse for policymakers and to define the competitive dimensions in the industry for key players. In particular, the study aimed to understand the reasons behind usage and preference of traditional taxi services (TTS), Grab, and Uber – the leading private transport brands in the city. The results were intended as input into a Usage, Attitude, and Image (UAI) market research study to accurately depict consumer response to the brands. Using market reports and in-depth interviews, the study described the key service attributes that consumers consider and evaluate, compared against the core service features of these transport options. A comprehensive industry analysis was done to compare and contrast the brands objectively. The fundamental service attributes were broadly defined as ride completion, safety, value for money, convenience, and ride experience, each composed of sub-attributes or features that all lead to customer satisfaction. The study concludes that multi-attribute variable comparison through conjoint analysis will be more suitable than a UAI study to depict consumer acceptability and preference for TNVS brands.

Keywords: Transportation Network Vehicle Services, Transportation Network Companies, Grab, Uber, Taxis, Metro Manila, Qualitative Consumer Research, Consumer Decision Making Process, Services

On 11 July 2017, the Philippine Land Transportation and Franchising Regulatory Board (LTFRB) issued a consolidated show-cause order addressed to My Taxi PH, Inc. (Grab) and Uber Systems, Inc. (Uber). Following a hearing where Grab and Uber representatives openly admitted to operating at least 80% of their fleets without provisional authority permits (PAs) or certificates of public conveyance (CPCs), the LTFRB imposed a fine of PHP 5 million to each transportation network company (TNC). This decision glossed over the fact that LTFRB had publicly stopped the processing and release of PAs and CPCs since 22 July 2016, citing the need to review existing policies.[1] This effectively limited the fleet size of both Grab and Uber.

If LTFRB followed their own regulations for the management of TNCs published as LTFRB Memorandum Circular No. 2015-016, titled the Terms and Conditions of a Certificate of Transportation Network Accreditation and released in May 2015, both companies faced the cancellation of accreditation and would have had to shutter their national operations.[2] In lieu of this sanction, LTFRB instead decided to impose a fine. On top of this fine, both Grab and Uber were tasked to submit to a list of administrative requirements in the screening and deployment of drivers in Metro Manila, including the immediate discontinuation of connecting riders to trips made with unaccredited drivers. Grab and Uber were granted 15 days to comply with the terms and conditions governing TNCs, or erring drivers would face up to three months' detention, a fine of PHP 120 thousand, and criminal charges as colorum vehicle drivers (i.e., public vehicles operating without a franchise). Meanwhile, LTFRB has made no definite confirmation that new and pending applications for Grab and Uber drivers would be granted permits.

Consumer response to this decision was swift. On the same day that LTFRB released the show-cause order, James Deakin, motoring journalist for the Philippine Star, posted a poll on his Facebook page to invite his followers to show support for Grab and Uber, as well as to challenge LTFRB to

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[1] Talabong, 2017

[2] *ibid*

overturn their decision. The poll consisted of one question: "Which of the two do you feel is the safer, more convenient option?" with the options presented as "Taxi" and "Grab/Uber." As a media personality, he stated in an accompanying post that he "(wanted) to give the decision-makers a snapshot of the amount of people that actually rely on and trust these services as their safest option when commuting… (and) that the whole success of ride sharing was born from the failures of taxis." Within three days, the poll generated almost 70,000 responses[3] overwhelmingly supporting Grab and Uber, with 99.7% preference for the two brands. A similar petition on Change.org posted on 16 July 2017 by Bobby Coronel, founder of a group of Grab drivers called TopSpeed, called for LTFRB to lift the suspension on PA and CPC applications. The petition has garnered over 56,000 online signatures since Grab re-posted the petition on its Philippine Facebook page on 17 July 2017.

These figures reflected public sentiment over TNCs and their perceived benefits to the transportation consumer. Since Grab and Uber have pioneered ridesharing through applications in the Philippines in 2013, demand has grown considerably. In December 2016, Uber Philippines general manager Lawrence Cua estimated that Uber had 600,000 active users in the country, serviced by a fleet of 20,000 drivers.[4] In August of the same year, Grab Philippines country director Brian Cu reported marginally better performance than its competitor "with more than 10,000 drivers located in seven key cities (servicing) more than a million users who have the mobile app on their phones."[5] The ascent of Grab and Uber has allowed for the entry of newer players in the ridesharing industry, such as Easy Taxi, Tipid, Tripda, U-Hop, Wunder Carpool, Angkas, and CitiMuber, which provided similar transportation services for commuting, package delivery, and other mobility services. As of 2015, the combined reported revenues of Grab and Uber in the Philippines amounted to PHP 636.8 million (Lopez, 2016), a mere 0.9% of the total PHP 69.5 billion that Filipinos in the National Capital Region spent on transport in that year[6] (Philippine Statistics Authority, 2016).

As noted by Deakin, the primary impact of ridesharing brands has been in overturning the relatively stable business of traditional taxi operators in Metro Manila. Faced with a decline in customer preference, taxi operators and drivers have become increasingly vocal in their contempt for TNCs. In March 2017, transport group Drivers Unite for Mass Protest and Equal Rights (DUMPER) held a protest in the offices of the LTFRB, asserting that Grab and Uber should immediately stop operations for precipitating the decline in profits of taxi drivers, aggravating the Metro Manila traffic situation, and for not paying due taxes and fees to the government[7] (claims that Grab denied[8]). Taxi drivers and operators, represented by the Philippine National Taxi Operators Association (PNTOA), believed that LTFRB was making competition "unfair," providing "foreign companies, like Uber…leeway, while local operators (have a) difficult time just to get (a) license," (Dela Paz, 2015a) and led calls to pressure LTFRB into enacting tighter registration rules (Tabamo, 2017). The inherent commentary in the LTFRB decision was that Grab, Uber, and other TNCs, were not safe for public consumption, since they were not regulated or governed by franchise policies and procedures that have been in place for taxi, bus, and jeepney drivers and operators for years. This did not seem to be the case for the riders, exemplified by reactions to Deakin's and Coronel's pro-Grab and Uber social media posts.

These often opposing stakeholder perspectives (i.e., TNCs, TNVS drivers, taxi operators and drivers, policymakers, and consumers) have made it difficult for LTFRB to enact or enforce regulation to manage the TNVS industry effectively. On top of these conflicting interests, some issues and benefits have overlapped, such as the GrabTaxi feature of Grab, which allows traditional taxi drivers and operators to make use of the Grab application's network of mobile-connected consumers, to provide rides at a premium price (standard GrabTaxi rides have featured a PHP 40[9] nominal

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[3] Noteworthy to highlight that the responses are in all probability skewed, since the application Deakin used, My Polls, doesn't explicitly screen Facebook users for any demographic information, among other safeguards typically taken to reflect public opinion accurately.

[4] Lopez, 2016

[5] Magtulis, 2016

[6] Since both Grab and Uber operate outside the National Capital Region, this proportion is inflated. That said, it is still safe to assume that majority of Grab and Uber's revenues are made within NCR.

[7] Cabuenas, 2017

[8] *ibid*

[9] as of July 2017

booking fee on top of the standard rate). These overlaps and opportunities for co-operation have shown the relative benefit of TNVS to both TNCs and taxi operators, but have been left out of regulatory consideration.

1　Significance of the Study

While several global studies have accounted for ridesharing services' effects on the transport economy and traditional transport frameworks of urban cities, studies have yet been unable to establish key parameters in terms of consumer acceptability and industry performance, as measures to evaluate the public impact of TNCs in the country.

Paronda, Napalang, and Regidor (2016) attempted to determine key performance indicators (KPIs) of TNCs in the Philippines as travel speed (average KPH), passenger expense (PHP spent per kilometer), reliability (number of available vehicles in an area), and quality of service (passenger rating). While these are relevant KPIs, the study focused on strictly quantitative measures and excluded consumer perception and brand imagery of ridesharing services in contrast to traditional taxi services, as well as an estimation of market dynamics and behavior upon the entry of Uber and Grab in the market. These key factors demonstrate the integral value of TNCs and TNVS to the modern transportation economy.

Nistal and Regidor (2016) attempted a more grounded approach to understanding the new services. Their method (1) anchored Uber's distinction as a TNC, in competition with taxi companies and (2) quantitatively highlighted that Uber was superior to taxis on several key attributes. The key weakness in the study was that it prescribed service attributes to respondents for evaluation, versus the original intent of market research, which was for attribute mentions and qualifications to emanate directly from the consumer.

While previous academic studies have focused on the legality and economics of ridesharing, consumer-centered research has not been maximized to provide context and dimension to the positive and negative effects of TNVS to the end-users. Additionally, previous research that aimed to quantitatively compare Uber and traditional taxi services have been limited by relatively small sample sizes (i.e., 226 respondents).

The objective of this study was to determine and define the service attributes critical to transportation consumers, thus establishing fundamental consumer decisions in the TNVS industry. This allowed a more comprehensive perspective of the burgeoning ridesharing economy and contextualized the differing opinions of TNCs and taxi operators. In further validating these core definitions, future studies can conclude whether consumers prefer one brand of TNC over another and the motivations behind their preferences. This benefits all critical stakeholders as it will clearly dictate the direction of service provision and innovation in the transportation industry as a whole, highlight opportunities for service improvement for both TNCs and taxi operators, and track methods and purposes of use for the development of appropriate regulatory standards. The imperative of academic research to understand consumer preferences in the modern transportation industry is to break the impasse between these conflicting stakeholders and to eventually design efficient services for public consumption and fair competition.

To be more specific, the study intended to guide policy development for the LTFRB, as the regulatory framework for TNVS seems to be evolving at a slower pace than market penetration. The insights gained from a consumer study can allow LTFRB to understand the root causes and motivations of the market, and therefore anticipate threats and issues within the new industry. The critical perspective of the consumer allows and empowers LTFRB to design policies through an evenhanded multi-stakeholder approach.

2　Research Methodology and Framework for Analysis

In achieving these objectives, the primary challenge was establishing the base preferences and motivations of TNVS and taxi users, as well as substantiating critical differences and similarities that are currently unavailable in the Philippines. The answer to this challenge produced a conceptual backbone of service attributes that can be used in further studies to accurately measure and

correlate certain attributes with specific transport brands. The service attribute list produced in this initial step of consumer understanding was intended as input for a standard Usage, Attitude, Image (UAI) market study. Miehlbradt (1999) explained that the UAI was an imperative tool in understanding new markets and providing information to specific suppliers and stakeholders to increase demand and improve service delivery. Specifically, the UAI can determine awareness, reach, and retention – all critical brand imagery factors that correlate to brand usage and loyalty. Since the UAI has been traditionally used as an internal market research tool (i.e., commissioned by private firms for business development), applying the methodology to the TNVS industry to influence public policy required modifications. In this regard, no single brand or service type of TNVS was given focus throughout the research. The methodology, instead, depended on consumer-initiated habits, behaviors, perceptions, and reasons for brand usage. The UAI methodology and findings themselves were not included in the scope of this study, as a fundamental understanding of the industry and its consumers was required prior to the execution of a deep-dive consumer study.

As a means of substantiating the findings, the second level of analysis aimed to draw definitive lines between consumer perception and actual service realities. This analysis intended to compare and contrast the service attribute list from consumer feedback, with the service menu currently provided by TNCs and taxi operators. By comparing consumer preferences with actual company services and provisions, there was potential to highlight issues in service design, implementation, or communication. This analysis was necessary to draw disparities between company vision and service delivery, and more importantly, to determine if TNCs were actually beneficial to consumers.

To be able to contextualize these findings, this study proposes the following in the succeeding sections:

1. **A review of the history of ride-sharing in the Philippines.** To be able to accurately establish the business model and context of TNVS in the Philippines as an emerging market, a brief history of the ridesharing economy's introduction will be presented based on available literature.
2. **A service proposition comparison among the major brands in the market**. To capture the current scope and scale of the industry, traditional taxi services (TTS) and TNVS brands Grab and Uber were compared and contrasted based on key service parameters using publicly available information on the services.
3. **A comprehensive understanding of consumer considerations when choosing TNC brands**, including priority service attributes and features. Through in-depth interviews with users of TTS, Grab, and Uber, consumer behavior was documented and collated to gain a baseline appreciation of the consumer journey through transportation options. The collected findings can be used to populate a UAI survey for future study.

3   Real-Time Ridesharing in the Philippines, A History

In contrast to Uber and Grab's recent entry into the Philippine market, taxis have been plying Filipinos around routes as early as 1930, with the establishment of Manila Yellow Taxi (Gopal, 2015). While the industry remains privately owned and operated, the Republic Act No. 4136 introduced in 1964 placed taxis under the jurisdiction of the Land Transportation Commission (later known as the Land Transportation Office, or LTO). The law has required owners and operators of taxis and other transport services to register their businesses and vehicles in order to maintain a standard of quality for passengers. Since then, rapid urbanization has spurred the growth of taxi coverage in key metropolitan areas, such as the National Capital Region. In a 2012 report on the Philippine transport industry, the Asian Development Bank stated that in 2010, taxis composed 35% of the 1.9 million vehicles in Metro Manila.

The vast majority of taxis in the Philippines have been considered ordinary taxis, which have no limitation in terms of pick up and drop off points. Taxis in the Philippines have been registered under the LTFRB via a certificate of public conveyance (CPC), an authorization issued in order to operate public services. Larger taxi companies in the Philippines operate a fleet of vehicles that can be dispatched to specific locations, while smaller operators typically have two or more drivers using registered vehicles in shifts to maximize vehicle capacity.

In more recent years, the taxi industry has been challenged by Transport Network Companies (TNCs) that basically performed the same function but with *dedicated point-to-point pick up and drop off through a dedicated mobile application*. The Philippines has not been a unique case study for TNCs and their offering, Transportation Network Vehicle Services (TNVS). Across the world, consumers and brands have been rapidly adapting to the seamless integration of technology and transportation to provide on-demand point-to-point chauffeur services, as well as the regulatory and economic effects of birthing a new industry within the framework of existing urban services. As the undisputed global market leader, Uber's disruptive performance in many markets has been indicative of the penetration of TNCs in various territories.

An industry report by Forbes in September 2015 suggested that while Uber's USD 50 billion market capitalization has made it the biggest ridesharing brand in the world, the business has been contested in several key markets. In Asia, the brand has failed to establish strong market leadership. China, Asia's biggest market, has Didi Kuaidi, a conglomerate of two ride-hailing applications that claimed 6 million rides a day in 2015 and had enough leverage to buy out Uber's entire business in the country in July 2016. In India, Olacabs has 14% of the market, compared to Uber's 4.5%; in Southeast Asia, Singapore's Grab has a much larger network of drivers and users in six markets including the Philippines; and Japan and South Korea have local social media applications LINE and KakaoTalk diversifying into ride-hailing functions. Over in Europe, Uber has been met with the most regulatory blockades. In 2017, the company either shut down or pulled out of operation in Bulgaria, Denmark, Hungary, and Italy (Craggs, 2017).

The United States is the landmark battleground for Uber, where it holds significant market leadership. Across the U.S., 20% of Americans on Android have downloaded the application versus Lyft's 2% (Chen & Huet, 2015). Uber has also successfully fended off regulators in most states, blocking the growth of smaller market entrants in the process. Horpedahl (2015) draws the model for contention between TNCs and traditional taxi companies that can be seen as the consistent regulatory dispute narrative faced by new TNCs around the world:

> The new (applications) allow consumers to bypass traditional taxicabs, offering the potential of lower prices, faster service, higher quality, and services when people might not have used a traditional taxicab...In most cities, it is illegal to pick up riders on the street without having the proper government license, and drivers with Uber, Lyft, and other companies typically make no attempt to obtain these licenses. (p. 360)

For-profit TNCs that provide upgraded services to consumers have shifted usage away from similarly for-profit taxi operators. However, this trend of innovation—using information and mobile technology to create significant value for consumers in traditional industries—has not been something exclusive to transportation. Amazon (retail industry), Netflix (TV and film industry), and AirBnb (hotel industry) are equally impressive case studies in adapting the same disruptive business model. TNCs have been in a unique situation since land transportation services were often heavily regulated, typified by the medallion system of New York taxicabs, a popular example of over-regulation in economic systems that have yielded less economic profits in the long-term as new market entrants compete (Gabel, 2016; Elliott, 2016).

The perspective that has heavily contested the continued operations of TNCs was almost completely legalistic. In Edelman's (2017) searing analysis of Uber, he decried the company's business model as "predicated on lawbreaking" (par. 3). Further, he argued that the legal hurdles that Uber had either jumped through or pivoted around using a team of legal experts has allowed it to flourish based on market demand alone, with no consequences. This conflict has been relatively consistent in Uber and other TNCs' operations throughout the world, with a market-driven grassroots effort to campaign for modern and efficient ridesharing services, up against an industry-backed effort to forestall dynamic shifts in the industry, all policed by established government controls. The Philippines has been clearly no exception to the rule, although there were welcome departures in the local version of events.

As of July 2017, only two TNCs have been awarded official accreditation by the LTFRB via its 2015 terms and conditions, Grab and Uber.[10] To provide more insight into each company's growth in the market, a brief timeline of each brand's operations in the Philippines is presented below:

Grab Philippines. Grab was initially launched as MyTeksi in Malaysia in 2012, before expanding in the Philippines as its first international market (Calvin, 2013). Rebranded as GrabTaxi, the application launched in August 2013 primarily as a middleman between taxis and riders, providing a mobile interface that assigned vacant taxi drivers to commuters through location-based technology, and charged a nominal fee (initially PHP 70, before eventually adjusting to PHP 40 in June 2016). GrabTaxi then launched in Cebu City in July 2014 (Doyzkie, 2014) and Davao City in October 2014 (Corpuz, 2014).

In May 2014, GrabTaxi piloted the GrabCar service in Manila with "a fleet of luxurious sedans such as Toyota Camrys," (Schnabel, 2015) but did not formally launch GrabCar and its premium version GrabCar+ until February 2015. GrabCar's service promise closely followed Uber's model of linking private car owners and drivers with riders, but GrabCar enjoyed the distinction of accepting cash for its services, whereas Uber exclusively accepted credit card payments. This service expansion was primarily seen as a response to Uber's increased presence in Manila during that time. Despite regulatory difficulties, GrabCar became the Philippines' first ride-sharing service given formal accreditation by the LTFRB following the release of its accreditation terms and conditions in Memorandum Circular No. 2015-016 (Agence France-Presse, 2015).

In January 2016, GrabTaxi and GrabCar relaunched all its international transport services into a single umbrella platform, simply known as megabrand Grab. The strategic branding aimed to cement its dominance in Southeast Asia as well as consolidate services under a more user-friendly interface (Tan, 2016). It also launched GrabBike, a ridesharing service focused on motorcycles instead of private cars. In the Philippines, GrabBike operations were eventually halted by the LTFRB in March 2016 because motorcycles were excluded from the TNC regulations originally drafted by the body (Francisco, 2016).

As of July 2017, the Grab application in the Philippines has two main service groups – Transport and Delivery.[11] Transport services include GrabCar, GrabCar+, GrabTaxi, GrabShare, and GrabCar (6 Seater). Users may also have packages delivered through GrabExpress and GrabExpress (Lite).

Uber Philippines. Uber, on the other hand, had launched in San Francisco in March 2010 but officially launched in Manila in February 2014 (Ma, 2014), making it a later market entry compared to Grab. Unlike GrabTaxi's smooth introduction to the market, Uber was met with almost immediate resistance from LTFRB with then chair Winston Ginez, who outright claimed that Uber and fellow newcomer Tripid were committing "a criminal violation of the Public Service Law" for linking private car owners with public commuters, a then unheard of transportation scenario in the country (Magdirila, 2014). Afterwards, local taxi operators launched official complaints against Uber, followed suit by a sting operation in October 2014 where a Toyota Fortuner driver was fined PHP 240 thousand for illegal operation. This action led to a public outcry for more humane and consumer-oriented means of regulating the service (Nieves, 2014).

Uber was credited to have spearheaded regulatory negotiations with the Philippine government, assisted by a cooperative Metro Manila Development Authority (MMDA) in November 2014 ("DOTC, LTFRB meet with Uber PH", 2014). While it is on record as the second officially accredited TNC by the LTFRB, then Transportation and Communication Secretary Joseph Emilio Abaya specifically cited the California Public Utilities Commission (one of Uber's staunchest government partners in the United States) in its expansion of the definition of public transport conveyances in Department Order (DO) 2015-011. The DO effectively paved the way for LTFRB to begin issuing CPCs to TNCs (Alba, 2015).

Unlike Grab, which initially partnered with traditional taxi operators, Uber started from the top of the consumer food chain – affluent commuters. Its primary service was known as UberBlack, and

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[10] LTFRB has also officially accredited U-Hop Transport Network Vehicle System, a Cebu-based third-party ridesharing application that links commuter shuttle buses primarily to office workers and students. The application does not function similarly to Grab or Uber, which uses a person-to-person reservation system, and is not in direct competition with taxi operators (U-Hop, n.d.).

[11] For the purposes of brevity and consistency, this menu excludes services currently tagged in Beta Mode on the Grab application as of July 2017.

catered exclusively to black limousine services more popular in the U.S. and Europe (Hartmans & McAlone, 2016). In the Philippines, UberBlack was classified as Uber's premium service, plying trips with high-end vehicles such as sport utility vehicles (SUVs), while its economical service options, UberX and UberPool, were more affordable and arguably more popular (although service line revenue and usage data for Uber are currently unavailable to the public). Only credit card payments were accepted at the onset of its operations. Uber also introduced a dynamic pricing system that provided a range of possible prices depending on travel time, which sometimes resulted in frustrating price disparities. In contrast, Grab offered cash payments and upfront, fixed fares. Uber eventually relented and provided cash payments in November 2015 (Dela Paz, 2015b) and upfront fares in October 2016 ("New Upfront Fares", 2016).

As of July 2017, the Uber application in the Philippines had two main service groups – Economy and Premium. Economy services included UberX, UberPool, UberHop, and UberXL, while the lone Premium service offered was UberBlack.

4 Service Comparison of Traditional Taxi and Transport Network Vehicle Services

To expound on the history of these competing services, this section intended to describe and compare facilities provided by traditional taxi services (TTS) versus the new amenities offered by TNVS. Through an objective description of stated or implied service promises, processes, and other provisions, the baseline service expectations can be presented for both types of transportation. This baseline description can then be compared to consumer perceptions in the succeeding sections, to draw out qualitative similarities or disparities, and develop conceptual framework for further research avenues.

For the purposes of this research, the succeeding comparison excluded several sub-features of TNVS, such as GrabTaxi and UberHop, since these tangential offerings were not directly in competition with services offered by TTS. GrabTaxi, as mentioned earlier, was a complementary feature intended to co-exist with TTS, while UberHop was positioned against public utility vehicles (PUVs) such as jeepneys that ply fixed routes. For the sake of consistency and focus, the following descriptions were also limited to service operations within Metro Manila, as TTS offerings differed in some provincial areas (e.g., pricing), and TNVS were not as established in non-urban or non-metropolitan areas.

This comparative analysis highlighted the similarities and differences between TTS and TNVS across four (4) key parameters: Service Promise, Service Process, Pricing, and Driver-Operator Relationship.

Service Promise. Both TTS and TNVS assured specific and private point-to-point transportation to a maximum of four riders for a fee based on distance and time. Vehicles used for transport are typically sedans, compact vehicles, or some Asian utility vehicles (AUVs), such as the Toyota Innova or Avanza. The Department of Transportation (DOTr) defined that all vehicles used for TTS or TNVS must have a maximum age of seven years from date of manufacture to be eligible for operation. These similarities in service promise clearly placed TTS and TNVS in the same category for private transportation in consumers' minds. This strengthened the assertion that TNVS and TTS were in competition for the same proportion of consumer expenditure.

TNVS have since introduced special features that expand on this core service promise, namely:

- **Premium** service options have allowed for the selection of high-end vehicles such as executive sedans, sport utility vehicles (SUVs), or Asian utility vehicles (AUVs). Premium TTS have also been available, based on DOTr Department Order No. 2015-011 (2015), with services and features comparable to airport taxis,
- **Shared** service options have allowed riders to open their private ride to other riders, who are travelling the same route at the same time. The TNVS mobile application automatically assigned pick up and drop off routes for the riders, and all riders received a discount on their fare. Shared TNVS rides were touted as a means to solve the traffic condition by introducing carpooling among strangers who happen to be traveling in the same direction at the same time, and

- **Large Group** service options have allowed for the selection of larger vehicles to accommodate a maximum of six (6) riders on a single trip.

Industry-wide sales figures or estimates were unavailable, making it difficult to conclude which of the features consumers often purchased.

Service Process. TTS and TNVS differed drastically in the process of fulfilling this basic transportation service promise. Reported below is a step-by-step delineation of the two major services, following a potential rider's journey from selection to ride completion:

Table 1. Service Process Description for Transportation Services in Metro Manila

	Traditional Taxi Services	**Transport Network Vehicle Services**
Hailing	Either (a) street-hailed, (b) station-hailed, or (c) hailed through phone or booking services. TTS are disallowed by LTFRB regulation from rejecting potential passengers[12], but as an individual driver-operated service, TTS are open to this option should the rider destination be undesirable for the driver.	Exclusively hailed through mobile applications. TNVS drivers are not allowed to select passengers. Instead, mobile application algorithms pair drivers and riders. That said, both TNVS drivers and riders may opt out of a booked trip, for a fixed fee or other penalties, to either party.
Pick Up	(a) Street-hailed TTS pick up riders at the point where the rider hailed the service. (b) Station-hailed TTS pick up riders at pre-determined stations in and around establishments (shopping malls, for example, have transport depots for TTS to wait for potential passengers). (c) TTS hailed through phone or booking service typically agree on a meet up point with the rider.	TNVS riders predetermine a pick up point upon booking through the mobile application. Some establishments, such as shopping malls and office buildings, may have pre-assigned pick up points based on historical data or assigned entrances and driveways.
Drop Off	TTS riders verbally declare the drop off point to the driver upon hailing. Riders are allowed multiple drop off points and to change their preferred drop off point. Riders are also allowed to end the trip en route to their drop off point, and simply pay the fare presented on the fare meter.	TNVS riders predetermine a drop off point upon booking through the mobile application. Riders are allowed to change the drop off point after pick up on the mobile application also. Riders are also allowed multiple drop off points, but since these drop off points are not recorded in the application, riders may be charged a higher fare for a longer trip than originally expected by the application. (Changes to drop off locations are not allowed for Shared services, since these preset locations are used to plot other riders' routes.)
Navigation	TTS riders and drivers verbally agree on a route to the destination. Both rider and driver can opt to change the route depending on other circumstances (such as traffic conditions). Navigation is dependent on the rider's and driver's knowledge of available routes, but can be supplemented by either's independent use of a map application, such as Waze or Google Maps.	TNVS drivers are provided an in-application recommended route to the destination. Both rider and driver can similarly opt out of the route, but riders may be charged a higher for a longer trip than originally expected by the application.

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[12] As stated in LTO Joint Administrative Order 2014-01

	Traditional Taxi Services	Transport Network Vehicle Services
Payment	TTS rely on a physical meter located at the central console on the dashboard of the vehicle. TTS meters show a real-time update of the fee that the rider is expected to pay upon the completion of the trip. Riders pay in cash, but drivers are not required to present a receipt upon payment (although some taxis are equipped with a receipt printer).	TNVS meters are mobile-application based. TNVS applications recommend the most efficient route using either an in-system algorithm or third-party application (such as Waze or Google Maps), and calculate distance and time to give the rider an upfront fare before confirmation of the trip. Riders opt to pay in cash or through enrolled credit card upon confirmation of the trip.
Post-Trip Concerns	Unless the rider establishes contact with the driver during the trip, TTS riders and drivers do not have an available communication channel upon completion of the trip. LTFRB has a devoted hotline for taxi concerns at 1342, a 24/7 hotline, or through 0917 550 1342 / 0998 550 1342, but the reporting of subpar service or other logistical concerns (such as left baggage) prove to be difficult for TTS riders. The same is true for TTS drivers who wish to report poor conduct or behavior from riders.	TNVS applications feature a post-trip rating system, where both drivers and riders are evaluated for different components of the trip (e.g., driving, navigation, etc.). This check-and-balance system allows for post-trip concerns to be reported and elevated to TNCs themselves. As a result, immediate or pressing concerns (such as left baggage) can be addressed more expeditiously.

Pricing. Both TTS and TNVS used a mix of per-kilometer and per-minute fare rate to determine how much each rider will pay after fulfillment of the service. Here, TNC brands Uber and Grab differed in the fare calculation as Grab exclusively used per-kilometer fares while Uber used both metrics. TTS, on the other hand, used a different per-minute system. Compared to a standard measurement of the total time of the trip, TTS compensated for traffic conditions using a per-minute *waiting time* rate. As per 2016 LTFRB guidelines, whenever a taxi is idling throughout the trip, each two (2) minutes of idle time cost the rider an additional PHP 3.50. The table reported below described the fare rate of TTS and the two leading TNC brands, based on their comparable service options:

Table 2. Schedule of Rates for Transportation Services in Metro Manila (in PHP), July 2017

	Traditional Taxi Services	Uber	Grab
Standard	*Ordinary*	*UberX*	*GrabCar*
Base	40.00*	40.00	40.00
Distance	3.50 / 300m	5.70 / 1km	12.00 / 1km
Time	3.50 / 2min wait	2.00 / 1min trip	N/A
Shared	*N/A*	*UberPool*	*GrabShare*
Discount vs Standard	N/A	UberX rates less 25%	GrabCar rates less 30%
Premium	*Airport / Premium*	*UberBlack*	*GrabCar+*
Base	70.00*	90.00	60.00
Distance	4.00 / 300m	13.75 / 1km	14.00 / 1km
Time	4.00 / 2min wait	2.45 / 1min trip	N/A
Large Group	N/A	*UberXL*	*GrabCar 6 Seater*
Base		60.00	60.00
Distance	N/A	8.55 / 1km	18.00 / 1km
Time		3.00 / 1min trip	N/A

*inclusive of an initial 500m travel distance

There were priorities for each brand in terms of value definition for riders looking specifically at the Standard services across the different transport **options**. Notably, Ordinary Taxis and UberX's pricing schemes were designed specifically to function within a hectic traffic system, both assuming that idle time that a driver spends in traffic should be a cost carried to the consumer. UberX's pricing compounded this slightly by considering total trip time, which, on top of idle traffic time, accounted for changes in routes and other time-sensitive trip decisions. As mentioned though, UberX has circumvented consumer frustration regarding traffic-exacerbated fares by introducing an upfront fare feature, where travel time is computed for the rider even before the trip begins. As such, an UberX rider did not have to pay more for a drastic change in traffic conditions after booking the trip. GrabCar, on the other end of the spectrum, was more seemingly consumer-oriented in its pricing scheme, focusing on distance as the sole metric of fare calculation.

From a strictly value-for-money lens, these different pricing schemes denoted different positioning strategies for the three transport brands. To be able to clearly establish the relationships of these pricing variables, the schemes are expressed in numeric equations below:

Definition of Variables.
F_t = Total Fare for brand t
x = Total Distance Travelled (in increments of 3km, accounting for the lowest common multiple for Ordinary Taxi, UberX, and GrabCar pricing schemes, such that x = 3km, 2 x = 6km, etc.)
y = Total Time in Motion (in increments of 2min, accounting for the lowest common multiple for Ordinary Taxi and UberX pricing schemes, such that y = 2min, 2y = 4min, etc.)
z = Total Idle Time (similarly expressed in increments of 2min)
$y + z$ = Total Time in Motion + Total Idle Time = Total Time Travelled (in increments of 2min)

Equation for Ordinary Taxi Fare.[13]

$$F_O = 40 + 35(x - 0.5) + 3.5z$$

$$F_O = 40 + 35x - 17.5 + 3.5z \tag{1}$$

$$\mathbf{F_O = 35x + 3.5z + 22.5}$$

Equation for UberX Fare.

$$\mathbf{F_U = 17.1x + 4(y + z) + 40} \tag{2}$$

Equation for GrabCar Fare.

$$\mathbf{F_G = 36x + 40} \tag{3}$$

Given these equations, it became easier to derive various fares given different trip scenarios for a rider. The variables can be derived from location-based map and traffic applications, such as Waze. As an example, Waze's recommended route from the UP Diliman Virata School of Business in Quezon City to SM Megamall in Pasig City on 20 July 2017, 8:00 PM, was 15km long ($x = 5$) and took a total travel time of 30 minutes, including 8 minutes of heavy, probably standstill traffic ($y = 11, z = 4$).

Using the equations stated earlier, the expected fares for the three transport brands were:
$F_O = 35(5) + 3.5(4) + 22.5 = \mathbf{211.5}$
$F_U = 17.1(5) + 4(11 + 4) + 40 = \mathbf{185.5}$
$F_G = 36(5) + 40 = \mathbf{220.0}$

For this particular example, UberX was the best value option (i.e., cheapest) for the rider, followed by Ordinary Taxi, then GrabCar. GrabCar only became the best value option in the scenario if an additional 26 minutes of idle time in traffic was expected from the trip (if $z = 13,$ then $F_O = 288.5,$ $F_U = 221.5$ and $F_G = 220.0$). During special occasions then, such as rush hour or inclement weather,

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[13] For Ordinary Taxi fares, x is initially expressed as x-0.5 to account for the 500m travel distance included in the PHP 30 base fare.

where this traffic condition could potentially occur in Metro Manila, GrabCar has been the best value option.

Given the same route recommended by Waze from UP Diliman to SM Megamall, Ordinary Taxis, on the other hand, cannot possibly be the best value option. If the route distance was assumed as constant, even if idle time goes down to 0 minutes, time in motion must increase by 22 minutes ($y = 20, z = 0$) for the UberX fare to cost more than the Ordinary Taxi fare (if $y = 16$ and $z = 0$, then $F_O = 197.5$, $F_U = 199.8$ and $F_G = 220.0$). This being the case, there was no practical reason for the travel time to increase this dramatically without a change in route, thereby increasing the distance travelled.

To highlight the relationship of the variables, a final hypothetical example was constructed where an Ordinary Taxi, an UberX, and a GrabCar were plying a straight route with no traffic (i.e., no idle time, thus $z = 0$), and all three were travelling at constant speeds of 60 km per hour (i.e., time can be expressed as a function of distance, thus $y = 1.5x$.)[14] The objective was to derive at what distance (x) does each transport brand have parity value with its competitors and can then be used by the rider to decide which brand has the best value option, given a certain distance. Mathematically, this exercise derived the point of intersection between the fare equations established for each transport brand.

Intersection of GrabCar Fare and UberX Fare Equations.

$$17.1x + 4(y + z) + 40 = 36x + 40$$
$$17.1x + 4(1.5x + 0) + 40 = 36x + 40$$
$$17.1x + 6x - 36x = 40 - 40 \tag{4}$$
$$-12.9x = 0$$
$$x = 0$$

The first finding was that the equations for F_G and F_U did not intersect at any given fare price, because their constant variable (i.e., PHP 40, the base fare) and therefore, y-intercept, was the same. The two equations intersected at $x = 0$. Thus, F_G and F_U never resulted in the exact same fare rate in this hypothetical scenario. This finding is understandable since F_G and F_U increase at varying rates, impacted by different variables.

Intersection of GrabCar Fare and Ordinary Taxi Fare Equations.

$$35x + 3.5z + 22.5 = 36x + 40$$
$$35x + 3.5(0) + 22.5 = 36x + 40$$
$$35x - 36x = 40 - 22.5 \tag{5}$$
$$-x = 17.5$$
$$x = -17.5$$

Second, the equations for F_G and F_O intersected at $x = -17.5$, denoting that the two brands never resulted in the exact same fare rate in this scenario. This finding is also understandable, given that the two fare rates increase at relatively the same pace, but F_O rates are compounded by the time variable, and therefore diverge more from F_G the further and the longer each type of vehicle travels.

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[14] To derive y at 60kph, $\frac{60 km}{1\ hour} = \frac{1\ km}{1\ min} = \frac{^1/_3 x}{^1/_2 y}$ $\therefore$ $y = \frac{3}{2}x$ *or* $1.5x$

Intersection of UberX Fare and Ordinary Taxi Fare Equations.

$$\mathbf{17.1}x + \mathbf{4}(y + z) + \mathbf{40} = \mathbf{35}x + \mathbf{3.5}z + \mathbf{22.5}$$

$$17.1x + 4(1.5x + 0) + 40 = 35x + 3.5(0) + 22.5$$

$$17.1x + 6x - 35x = 22.5 - 40 \tag{6}$$

$$-11.9x = -17.5$$

$$x = \mathbf{1.47}$$

The most interesting relationship was between F_O and F_U because both fare rate equations were impacted by both distance and time, the two equations intersected on the positive side of the x-axis, specifically at $x = \mathbf{1.47}$ or at roughly 4.4 kilometers. Given the slope of the two equations, this means that, assuming constant driving speeds, an Ordinary Taxi will be more affordable than an UberX for trips less that 4.4 kilometers, while UberX will be more affordable for trips more than 4.4 kilometers. Thus, the practical conclusion of this section is that a consumer can correctly choose the best value option between Ordinary Taxis and UberX simply by considering how far their destination is.

That said, it can be concluded that fare rate is a weak indicator of total brand value to the consumer, as the pricing schemes of all three transport options make it difficult for an average rider to feasibly and easily compare transportation prices. This does not, however, imply that consumers selecting a brand among transport services are not price sensitive. On the contrary, riders may very well be vigilant about choosing the best value option, but given the relatively rigorous mathematics (compared to a straightforward price versus price comparison) required to compute for exact fare rates, it can be assumed that consumers consider price differently for these services. (In fact, in the consumer interviews that follow, some interviewees claim that instead of computing, they simply open and switch between mobile applications to verify and check prices for a particular trip, before selecting an option.)

Dynamic Pricing. For Grab and Uber, these pricing schemes were made more complicated by dynamic pricing strategies. Dubbed Rush Hour Rates for Grab and Surge Pricing for Uber, dynamic pricing increased upfront fare rates by a certain fixed percent when demand for rides exceeded supply in a given area. The economic justification behind the implementation of dynamic pricing was sound in theory – TNVS drivers were directed to "surge" areas by their mobile applications to avail of higher fare rates, and all passengers in high traffic areas were provided transportation (thus, supply met demand).

Due to the everyday consumer's relative unfamiliarity with fluctuating price points, TNVS riders perceived dynamic pricing as a frustration (Horpedahl, 2015). Some other consumers took it as signal to postpone their transport needs and to find other activities within closer proximity of their current location while waiting for prices to normalize (Hall, Kendrick, & Nosko, 2015).

This type of pricing scheme was absent in the formal definition of TTS service processes, but the habit of contracting, or verbally committing to a fixed amount before the start of the trip, was a prevalent occurrence in Metro Manila despite being illegal (Nistal & Regidor, 2016). This pricing model has been somewhat similar to dynamic pricing because drivers typically consider that riders have few or limited options and would be willing to pay a premium for immediate transportation. TTS drivers implemented contracting on an individual or small-scale scope (e.g., a taxi driver will evaluate the traffic in a route he has recently plied), while TNVS' dynamic pricing mechanisms were based on technical data for a given geographical area.

Driver-Operator Relationship. While probably the least important factor considered by consumers, TTS and TNVS also differed in their standard business models, which have implications on both the design and quality of service provided to riders.

TTS were traditionally designed as small-scale entrepreneurial ventures. Since TTS operators were required by the LTFRB to be a duly registered business under the Department of Trade and Industry (DTI), operators often invested in more than one vehicle presumably to maximize government fees due to LTFRB and DTI and reach economies of scale. On top of fees, TTS operators were also required by LTFRB to ensure that all vehicles have a licensed professional driver, devoted garage space, and regular mechanical maintenance (LTFRB, 2015). Sturdy, Reno, MGE, EMP, Dollar,

and Basic have been some established taxi brands in the Metro Manila, with fleets ranging in the hundreds. For some of these larger companies, drivers were contracted as regular employees with fixed salaries and benefits.

On the other hand, for the vast majority of taxis with much smaller operating fleets, drivers essentially rented out vehicles to conduct business. These smaller TTS operators required drivers to pay a "boundary," a fixed rent for the day's use of the vehicle, payable at the end of the driver's scheduled shift. As a result, TTS drivers subsisted on a daily income consisting of their fare collection, less rent and gasoline expenses. In a 2010 ABS CBN report, former LTFRB chair Alberto Suansing highlighted a worst-case scenario for TTS drivers. He described that "some taxi operators charge their drivers PHP 2,000 a day (in boundary) to use their taxis. Ironically, some taxi drivers only gross PHP 3,500 after 16 hours of driving but will have to pay an additional PHP 1,500 for fuel," resulting in zero income for the driver. These constricting employment circumstances may have been what led to contracting or overcharging (Brown, 2015), since drivers were forced to explore other avenues of earning a daily living.

For TNVS, the business model has been much more beneficial to operators and drivers. On Grab and Uber's official websites, their businesses hired partners to voluntarily register their vehicles, themselves as drivers, or both, into their mobile application's systems (dubbed Uber Partners or Grab Peers). Vehicle owners were treated in the same regard as TTS operators – they were required to maintain the upkeep of their vehicle and shoulder other vehicle-related costs. If owners chose to rent out their vehicle, TNCs matched these with registered drivers in their system, and owners received the fare collection profit (less the TNC's operating margin of 20% and the driver's income share).[15] If, on the other hand, they chose to drive themselves or to hire their own drivers, they received the entire fare collection profit (and paid their hired drivers a predetermined salary).

While LTFRB required TNVS operators to submit to the same regulatory measures as TTS operators, the arrangement has been more beneficial for TNVS operators. *First, they received their operating profit in complete and in bulk from the TNC on a monthly basis*, compared to the daily incremental collections that TTS operators receive. *Second, they have more flexibility with their assets*. Should they wish to convert their vehicle for private use, they can do so on a daily, or even hourly, basis. Since TNVS vehicles were not required to have specialized license plates or registration, TNVS operators can even retire these vehicles for a resale price significantly higher than that of taxis. *Lastly, TNVS operators were ensured business as trusted suppliers.* Unlike TTS operators, who conducted business on their own fund, TNVS operators functioned as suppliers to TNCs. This means that business is more stable, and TNCs are invested in a continued partnership with the operators. During its earlier years, Grab and Uber introduced financial incentive programs to entice more TNVS operators to register, but business observers noted that these incentives were slowly being phased out by TNCs (Basa Cruz, 2014).

Driving has also been more profitable, safer, and less taxing for the TNVS driver. On top of the benefits stated above if the driver owns the vehicle, individual drivers have more flexible work hours and access to financial incentives and rewards provided by TNCs for monthly trip achievements (essentially gamifying the system). In return, TNVS drivers have been instructed to be polite, accommodating, and are restricted by the system from collecting additional fees. The check-and-balance developed by TNCs through the post-trip rating feature has also added a layer of security for both drivers and riders.

5   Consumer Interviews and Key Research Findings

To be able to translate these objective service definitions and provisions into its actual impact on consumer habits, perceptions, and preferences for TTS and TNVS brands and services, in-depth interviews were the selected methodology for the research. Qualitative research also highlighted which of these service attributes or benefits were actually experienced by consumers. Interviews were conducted among Metro Manila residents who have used TTS and/or TNVS in the past four (4) weeks (P4W), through a convenience criterion sampling method (Patton, 2001) since the intent of

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[15] It is not clear for either Grab or Uber if fuel expenses are paid for by the driver or the vehicle owner in this arrangement.

the research was to collect general information with no specific bias toward demographic profile. For TNVS use, interview respondents were limited to Grab and Uber, as the most prominent brands and the only TNCs granted official accreditation by LTFRB. All interviews were conducted in May 2017.

Qualitative data was collected to have respondents themselves define and initiate language and terminology for the service attributes and benefits they expected and experienced from TTS and TNVS. This allowed for more nuanced qualifications of what denoted poor, acceptable, or excellent service options, and can be used to populate a UAI market study with service attributes and variables. These variables were then quantitatively measured (a) to determine the strength of association of certain attributes with a particular brand of service, and (b) to identify critical attributes that most heavily factor into consumer's purchase or loyalty decisions. To achieve this objective, a discussion guide was designed to feature open-ended questions that allowed respondents to verbalize their own habits, perceptions, and preferences among the transport brand options (see Annex A).

Specifically, three behavioral profiles were identified based on products/services used most often (PUMO), and the succeeding findings were categorized according to findings based on these profiles. To wit, in the P4W, respondents were either classified as:

1. **TTS PUMO User**, i.e. used TTS and did not use TNVS,
2. **TNVS PUMO User**, i.e., used TNVS (Grab and/or Uber) and did not use TTS, or
3. **Mixed User**, i.e., used both TNVS (Grab and/or Uber) and TTS.

TNVS PUMO Users and Mixed Users were further sub-divided into Grab BUMO[16], Uber BUMO, or Mixed BUMO users, based on their preference for specific brands of TNVS. TNVS PUMO Users primarily consisted of Standard service users, i.e., GrabCar and/or UberX. This second level of analysis allowed more nuanced qualification of TNVS performance across different brands. A total of 193 interviews were collected and recorded, spanning from 15 to 45 minutes in length. The respondents did not represent equal distribution among the behavioral profiles. (As such, the actual quantitative weights of these findings were outside the scope of this study.) Respondents were screened solely on the basis of usage of either TTS and TNVS prior to the interview in the P4W.

The key findings from the qualitative data collection are presented below, grouped into salient points that broadly describe consumer habits, decisions, perceptions, and preferences, respectively:

FINDING 1: For most consumers, TTS and TNVS were extraordinary transport choices, considered only in special occasions. In their daily routines, the typical Metro Manila commuter has a host of options, and a vast majority of respondents still considered <u>public commute first</u> (i.e., trains, jeepneys, and buses) over private, point-to-point travel. The primary motivation behind this habit seems to be economic – commuters consider an acceptable price range for daily travel (i.e., from home to place of work or study) and abide by that budget. To these types of commuters, since an MRT or bus ride costs between one-sixth to one-fourth of the cost of a taxi or TNVS ride, the decision to frequently use public transportation is simple. A few respondents also consider time as a factor for using public transportation, specifically citing the MRT and LRT as fast, traffic-free options during off-peak hours. During peak hours though, the MRT and LRT are still time-efficient, but become emotionally taxing because of general discomfort. Some other respondents note that the MRT and LRT are only options if the commute requires passing through main Metro Manila arteries such as Epifanio delos Santos Avenue (EDSA), Taft Avenue, or Aurora Boulevard. Commuters who travel through other routes have less options.

For commuters who primarily considered public transportation, some external/environmental criteria have to be true at the time of transportation before TTS and TNVS are even considered, much less selected. Listed below are scenarios or instances where these types of commuters preferred TTS or TNVS:

- When the rider does not know or is unfamiliar with the destination,
- When the rider is traveling in a sizeable group, or the group includes a child, an elderly person, or someone who needs to be comfortable during the duration of travel,
- When the rider is traveling with sizeable or valuable possessions or purchases,
- When the rider has to arrive at their destination at a certain time, and current public transportation options will render them unable to arrive on time,

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[16] Brand Used Most Often

- When the rider has to or wants to be comfortable during the duration of travel, either to avoid undesirable situations, such as inclement weather, rush hour, walking from their drop off point to their final destination, and/or to look presentable at their destination (i.e., *"looking fresh versus haggard"* using verbatim terminology), and/or
- When the rider has a complex travel requirement, such as multiple pick up and drop off points.

These factors can be present individually or all together for a commuter to consider TTS or TNVS, but most respondents stated that the intensity of one or more situations (e.g., heavy rain storms, compared to light and infrequent rain showers) might have influenced their behavior more. All regular commuters were aware that the additional or incremental benefits they expect from TTS or TNVS will cost them more versus public transport fares that will, more or less, get them to the same destination.

On the other hand, private vehicle owners also considered TTS and TNVS as special-occasion transportation options. Because private vehicle owners already have an established means to travel privately and comfortably from point to point, they only considered TTS or TNVS when their private vehicle is unavailable for travel. Reasons cited included number coding traffic regulations[17], technical or legal vehicle issues, and other household members using the same vehicle for other travel. Since these types of travelers were accustomed to private, point-to-point transportation, they claim they will more likely use TTS or TNVS versus public transportation options, should the occasion arise.

These private vehicle owners seemed to be less price-sensitive, rarely citing cost as a primary consideration when selecting travel options in lieu of their vehicle. For them, public transportation was only a consideration if it will be more time-efficient or energy-efficient to choose that option. For example, a private vehicle owner respondent stated that a UV Express, a type of fixed route PUV, plies the route between his village and the general vicinity of his office in Bonifacio Global City. During days when his vehicle is under number coding restrictions, he preferred this option.

The last group of Metro Manila travelers was composed of regular TTS and TNVS users or private commuters. These consumers did not own and did not frequently travel using a private vehicle, and preferred TTS or TNVS when traveling. These private commuters are about as price-sensitive as private vehicle owners, and will rarely consider public transportation. The simple observation is that this type of consumer is more affluent than the average commuter (though this has to be substantiated quantitatively), but the common thread among this group of transport consumers is how much they value time and energy. They regularly cited Metro Manila traffic as a tangible problem that negatively affects their daily productivity and efficiency, and will consider extraordinary measures to escape or avoid it. This included mentions of choosing a job with a flexi-time schedule, moving closer to their place of work or study, or organizing carpools among colleagues. These are indicators of higher disposable income, but that claim is inconclusive in a qualitative study.

That said, private commuters are aware that their lifestyle costs more because of their travel choices, but they do not see it as an extravagant expense. Instead, there seems to be a clear trade-off in their minds that while public transportation is available, it means that they will have to expend time and energy just to get to their destination. In their words, public commute is like preparing for battle (i.e., *"mapapasabak,"* which literally means to leave for war or battle in Filipino). As a result, they are prepared to spend more to save themselves from the frustration of traffic.

FINDING 2: When considering between TTS or TNVS formats and brands, consumers went through multiple assessment decisions before arriving at a decision. Upon arriving at the decision to choose either TTS or TNVS, consumers had a second-level decision to make. This decision can be summarized into two – (1) hail a TTS ride on the street or in a station, or (2) book a TNVS ride through a mobile application. While the option to book TTS through phone or website was an option many are aware of, none of the respondents claimed this was a selection that they make. They

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[17] Number coding is part of the Unified Vehicular Volume Reduction Program (UVVRP) of the MMDA, implemented in most areas of Metro Manila. It imposes a daily schedule where vehicles are prohibited from entrance into major thoroughfares from 7:00 AM to 7:00 PM based on the last digit of the vehicle's license plate number. (Metro Manila Development Authority, 2016)

viewed this feature of TTS as dated or difficult, as phone calls were costly and TTS contact information were difficult to find.

For TTS PUMO Users and TNVS PUMO Users, this decision was fairly simple. Each PUMO user exclusively selected their favored formats in lieu of the other. TTS or TNVS PUMO Users claimed that they made this selection out of routine (i.e., it is the format they have used most recently or most frequently). This suggests a habitual buying behavior pattern (Kotler, Brown, Adam, & Armstrong, 2001), where consumers have particularly low involvement in the category and find no significant differences between available formats or brands. To the contrary, when probed, consumers actually stated that their favored formats involve a conscious and consistent rejection of the other option. For TTS PUMO Users, they found the need for a stable Internet connection and the driver pick up wait time for TNVS unnecessary, especially if a taxi station was nearby or if vacant taxis frequently passed through their preferred pick up point. Some also mentioned a fear or distrust of online credit card transactions, or negative feedback from trusted individuals, as barriers for trial or preference for TNVS. Lastly, some respondents lamented having to use or expose their mobile phones to hail a TNVS, presenting themselves to security concerns.

For TNVS PUMO Users, TTS were perceived as second-rate private transportation options. With the speed and convenience of TNVS, they said that they were downgrading if they chose to go with a TTS for their transportation needs. They listed a host of attributes such as, but not limited to, driver capability and attitude, convenient payment methods, and post-trip rating as some of the reasons they favored mobile applications versus manual hailing. (These attributes are discussed in more detail below.) On top of that, most TNVS PUMO Users focused on safety as a prevailing barrier for TTS usage, asserting that unsafe or unfair taxi practices such as contracting, hazardous driving, and customer abuse, were absent or at least manageable through TNVS. Some TNVS PUMO Users, particularly users of UberPool and GrabShare, also mentioned a higher-order need of wanting to help alleviate traffic by carpooling, thereby lessening cars on the road.

TNVS PUMO Users openly admitted to having been frequent or regular TTS users prior to the market entry of Grab and Uber, but after several successful rides with TNVS (respondents estimated between one month to one year of mixed usage before full conversion), they claimed to have stopped TTS use completely.

Compared to TTS PUMO and TNVS PUMO Users, the most interesting subset of private land transport consumer was the Mixed User, who has booked both a TTS and a TNVS ride in the past four weeks. Mixed Users did not seem to be format-loyal because they wanted to maintain flexibility, insisting that there were moments when either a TTS or a TNVS trip was more preferable. Broadly, Mixed Users evaluated their pick up location and then decided based on their proximity to the nearest TTS or TNVS. To wit, they mostly identified taxi stations as a convenience exclusive to TTS. To them, TNVS have inevitable wait times and potential for pick up location inaccuracies in certain locations like malls, schools, and other large venues, whereas TTS were often lined up in preset areas. On that same note, TNVS were the most optimal choice for them when their pick up or drop off point is relatively remote (i.e., not a regular route for vacant taxis). A few Mixed Users even asserted that TTS and TNVS were totally different services, and, for them, it was not a simple exchange decision between one and the other.

FINDING 3: The final brand selection in land transport purchase was made when the rider takes active consideration of a hierarchy of service attribute expectations for either taxi, Grab, or Uber. Listed and sorted below are service attributes identified and defined by respondents for land transport purchases in Metro Manila:

Table 3. Service Attribute/Feature Descriptions for Transportation Services

Attribute	Definition and Features
Convenience	Perceived speed and ease of use of the service • *Payment Methods* – ability of rider to specify preferred mode of payment • *Speed of Access* – length of time between rider's intent to hail a service and ability to hail a service • *Ease of Access* – amount of physical effort between rider's intent to hail a service and ability to hail a service • *Speed of Use* – length of time between rider's confirmation of service to rider pick up

Attribute	Definition and Features
	• *Ease of Use* – amount of physical effort between rider's confirmation of service to rider pick up
Ride Completion	Ability of driver and vehicle to complete rider transportation request • *Vehicle Availability* – sufficient supply of vehicles in pick up location • *Ride Options* – ability of rider to specify trip format (i.e., Standard, Premium, Shared, or Large Group) • *Seating Capacity* – sufficient seats for number of riders • *Baggage Capacity* – sufficient space for rider cargo • *Navigation* – ability of driver to determine route to destination • *Trip Duration* – ability of driver to reach destination within expected time
Ride Experience	Perceived tangential benefits to the rider • *Vehicle Comfort* – provision of private vehicle amenities inside the vehicle • *Driver Attitude / Skill* – ability of the driver to conduct themselves professionally • *Additional Services* – provision of added amenities inside the vehicle
Safety	Ability of driver and vehicle to securely and harmlessly transport the rider and rider cargo from pick up to drop off points • *Vehicle Safety* – technical condition of vehicle • *Driver Identity / Contact Information* – presence of identification or contact information about driver and/or driver's company • *Post-Trip Rating* – ability of rider to give feedback on driver performance • *Trip Information Sharing* – ability of rider to share trip information to other people
Value for Money	Perceived benefit of the ride to the rider, compared to expected trip fare • *Upfront Fares* – ability of driver to present a fixed fare for the duration of the trip • *Discounts* – availability of fare-reducing promotions

To organize the listed service attributes that respondents noted as input for a UAI market study, the Kano model was used as a framework to classify the attributes. The Kano model (Kano et al., 1984) was constructed to categorize attributes or Qualities that yield customer satisfaction. The model identifies three key Qualities comparable among brands in the same category:

- **Hygiene / Basic Qualities** (Must-Be Qualities) – attributes that were fundamental to service fulfillment: if present, customer was indifferent; if absent, service was incomplete
- **Performance Qualities** (One-dimensional Qualities) – attributes that were based on the relative performance of one brand in comparison to another: if present, customer was satisfied; if absent, customer was dissatisfied, and
- **Delighter Qualities** (Attractive Qualities) – attributes that were unexpected and therefore, elicited excitement or paramount satisfaction: if present, customer was delighted; if absent, customer was indifferent.

The Kano model further theorizes that, over time and exposure to a certain brand or category, these Qualities shift. As such, Delighter becomes Performance Qualities, and Performance becomes Basic / Hygiene Qualities. Thus, the Kano model provided ideal conceptual framework behind attribute expectations that respondents have for TTS and TNVS rides, demonstrated in the table below:

Table 4. Service Attributes for Transportation Service Classified through the Kano Model

Group	Attributes
Hygiene / Basic Qualities	• Ride Completion • Safety
Performance Qualities	• Value for Money • Convenience
Delighter Attributes	• Ride Experience

Each category and attribute is discussed in further detail to completely illustrate the consumer journey in selecting land transport options.

When selecting specifically between TTS, Grab, or Uber, respondents stated that their first and foremost consideration is Safety. For example, when the trip was late into the evening and/or their destination was unfamiliar, respondents who have recently tried a TNVS claimed that they would most probably select TNVS. This was because, to them, TNVS provided "incremental peace of mind," through features that purposefully remove rider insecurities, such as driver identity and contact details, post-trip rating, and the ability to share details of their trip. In general, the rider will take stock of their current situation or location, and decide which of the available transport options is the safest.

For most rides though, the environment was safe or peaceful enough and Safety was not a tangible or pressing concern. Respondents then seemed to consider other factors, such as Value for Money and Convenience, but they also deliberated on Ride Completion. Because Ride Completion described basic ride expectations, consumers did not actively compare the attribute across transport brands. However, on the occasion that any of Ride Completion features were unavailable or insufficient, the absence of those features can motivate a rider to look for other options.

The simplest of Ride Completion sub-features to understand was Vehicle Availability. Respondents stated that if any of three brands were unavailable or inaccessible in their current pick-up location, it was automatically out of consideration. Residents from the periphery of Metro Manila (i.e., Rizal, Laguna, or Bulacan), where both Grab and Uber were seldom available, stated that they preferred TTS when traveling into Manila. That said, when any of the other features of Ride Completion were unmet or unsatisfied, users have switched immediately, especially when the trip has to be made urgently. If all available options can be expected to provide satisfactory service in this first set of Hygiene / Basic attributes, then all are still up for consideration in terms of Performance Qualities. If any option was lacking, in their perspective, it got eliminated.

The second set of attributes, Value for Money and Convenience, were evaluated similarly, and riders apparently made a tradeoff when prioritizing one over the other. Value for Money was defined as the perceived benefit of the ride to the rider, compared to the cost expected from them to complete the ride. As both TTS and TNVS riders were already prepared to pay a premium over public transportation, this perceived benefit was expectedly higher than normal. Value for Money was primarily derived through Upfront Fares, a feature available only through TNVS. Because this fare rate check can be done remotely on their mobile devices, TNVS have the benefit of *first contact opportunity*. That means, specifically for Mixed Users, they will check TNVS prices first, and will only consider TTS if the Upfront Fares are undesirable (i.e., if dynamic pricing is in effect). Mixed Users indicated no specific preference toward Grab or Uber in this first contact situation. This is also the opportunity of the rider to consider discounts and promotions. If the TNVS Upfront Fare can be reduced through the entry of a promotion code, the discounted price can be a make-or-break decision. Further, Upfront Fares for TTS were also available in the form of contracting, but respondents generally distrusted this form of pricing for TTS since it is based on driver's perception of traffic and other trip factors and were often significantly more expensive than the metered rate. Respondents were aware that this was illegal for the driver, but conceded to agreeing when they have no choice.

At the same time as Value for Money is considered, Convenience was also assessed by the rider. Convenience referred to all aspects of accessing and using the service that can be measured using time or energy. As such, services that are faster and require less effort to hail, arrange for pick up and drop off, and pay are given priority in this attribute. Convenience evaluation required two key sources of information for the rider – (1) awareness of service brand benefits and features and (2) evaluation of current environment. Gaining awareness of service brand benefits, to them, was the responsibility of the brand. If the brand had advertised new features or if the rider had learned of new features through word-of-mouth, then were equipped to evaluate which brand is most convenient. And then, similar to their evaluation of Safety, the rider took stock of their current environment, and evaluated how soon they want their service to commence or how much effort they were willing to expend for the service to commence. For example, during a heavy rain storm at the end of a work day, a respondent said that they were not willing to go far from the building they were

in to hail a ride and were aware that available transport stations might be at full capacity already (i.e., buses or the MRT), so the easy option was to just open a mobile application and hail a TNVS.

Probed further on how Value for Money and Convenience were compared or evaluated, respondents depicted a tradeoff between the two attributes. They tended to agree that they were willing to pay more if there was a higher need for a convenient ride (e.g., urgent trips or unfamiliar locations). For non-urgent rides (e.g., routine trips or trips that were time-sensitive), respondents chose the best value option available. The tradeoff among this set of Performance Qualities is interesting particularly for TNVS, because these factors essentially highlight the difference between Grab and Uber. Both TNVS PUMO and Mixed Users tend to agree, without prompts, in categorizing Grab as the Value for Money option, and Uber as the Convenient option. In sorting the two brands as such, there seems to be clear brand positioning strategies between the two brands.

For Mixed Users, if TTS were still considered among the available options, TTS became the Value for Money option, while Uber was still the Convenient option. In this scenario, Grab seems to be positioned in the middle of TTS and Uber, deemed as good Value for Money and still capable of Convenient trips. While not definitively proved through qualitative research, Mixed Users seemed to favor Grab in these scenarios because of this "best of both worlds" positioning strategy.

For TTS PUMO Users, while they were generally aware of the added benefits of TNVS rides, it did not attract them enough to change their regular habits. Some respondents noted that TTS were always cheaper, and therefore always better Value for Money, while others stated that the TTS meter was more trustworthy than the algorithm-computed fare in mobile applications.

Lastly, Ride Experience was a critical attribute for some riders, but some were indifferent whether their trip has additional services. Ride Experience seemed to be the outlier attribute among those considered by riders, which is understandable given that these features are mostly recent innovations. Prior to TNVS, riders were not aware that they could consistently count on private vehicle amenities (e.g., control of air conditioning or radio station, comfortable and clean seats, etc.) or driver courtesy. As a matter of fact, former regular TTS users considered this the "game changing" aspect of TNVS, as they have formalized what used to be rare or chance occurrences. A few respondents noted that, before, choosing a clean and relatively new taxi model was impossible, especially if in a taxi station or line. But now, all TNVS were new and clean models with functioning amenities. Added services such as providing candies, hand towels, etc., were also noted as pleasant, if rare, surprises for choosing TNVS.

For TTS PUMO users, these added benefits are simply bells and whistles, and perceived it as generally unaffordable. To them, the trip was temporary anyway, and the main objective was to get from point to point. TNVS PUMO and Mixed Users also similarly claimed that these benefits were not the primary reason they choose TNVS. Instead, respondents highlighted that these add-ons simply validate the premium price of their choice, after it has been made.

FINDING 4: In general, Grab and Uber have distinct brand positioning even among TNVS and have consistently higher perceptions than TTS among those who have tried. For TNVS PUMO and Mixed Users, TNVS represented a clear improvement in transportation quality. On almost every service attribute listed above, TNVS tended to be rated more favorably than TTS, for those who have recently or previously tried both services. The sole exception to this statement is Vehicle Availability, a feature under the basic attribute of Ride Completion. Across all types of users, TTS were still more readily available and more visible to consumers.

That said, when asked to compare Grab and Uber, both TNVS PUMO and Mixed Users seemed to agree that there are stark differences between the two. Using the service attributes and features established earlier, listed below are general perceptions among TNVS PUMO and Mixed Users regarding the two brands:

- *Ride Completion* – Respondents cited no significant difference or preference among Ride Completion features, as these qualities are classified as inherent or "part of the package" of TNVS in general. No distinction was made for either of the two brands.
- *Safety* – Uber tended to have slightly higher preference in terms of Safety. This perception seemed to be anchored on two things, namely (1) Uber was credited to have started Post-Trip Rating and Trip Information Sharing, therefore being closely associated with those two features, and (2) Grab being associated with TTS from its initial launch as GrabTaxi. Since GrabTaxi is a Grab feature that uses TTS networks, respondents recalled negative feedback

or stories shared on social media where the brand was used for a service that went awry. These were deeply ingrained perceptions for some respondents (i.e., will never use Grab because of word-of-mouth).

- *Value for Money* – Despite earlier demonstration of fare rate equations showing Uber to be somewhat more economical than Grab, Grab was actually perceived as the cost-efficient option. On both Value for Money features, Upfront Fares and Discounts, Grab tended to receive higher preference. Both features were initially implemented by Grab and, to this day, Grab has launched more promotions and discounts, which may validate this consumer perception. Uber, on the other hand, was seen as a premium upgrade from Grab and was associated with coining Surge Pricing, and was therefore perceived as an expensive option.

- *Convenience* – Grab and Uber differed on the two dimensions of Convenience: speed and effort. Among Grab BUMO users, specifically, Grab was perceived as a faster and more accurate application that experiences less glitch and was able to pinpoint pick up and drop off points accurately. To them, Uber was "clunky" and difficult to explore. Uber BUMO users, on the other hand, were attracted by Uber's simpler and straightforward interface. To them, because Uber asks "Where to?" upon application startup, it was more user-friendly and intuitive. To these users, Grab was seen as a copycat in terms of convenience features, but this did not seem to negatively affect their perception of Grab.

- *Ride Experience* – Respondents also cited no significant difference or preference among Ride Experience features, except Uber's head start on Post-Trip Rating could be a reason why most respondents associate professional drivers with Uber more. To almost all respondents, Grab and Uber used the same types of vehicles (with some even noting that some Uber Partners and Grab Peers simply switched between applications using the same vehicle).

In summary, the core differences qualitatively described for Grab and Uber were on the performance attributes of Value for Money and Convenience. To respondents, Grab was the economical option that was capable of the same TNVS benefits. It was somewhat associated with TTS still, so it was perceived to be somewhat less safe and cheaper due to promotions. On the other hand, Uber was observed as the premium option that excelled in safety and professionalism. It was also perceived as a more expensive service due to dynamic pricing.

6   Implications and Avenues for Further Study

The results of the study conclusively support the notion that TTS and TNVS are in the same market consideration of Filipino transport consumers. This then sets precedent for LTFRB, assuming its inherent function is to supervise and regulate all land transport business operations, to determine policies and execute standards for all TNVS. That said, given the disruptive nature of Grab and Uber's entrance into the market and the substantial incremental value TNVS provides consumers, LTFRB needs to have a more data-grounded and nuanced comprehension of the changes in the market. Since the operations and service promises of TTS and TNVS fundamentally differ, the body must be guided by industry and market information to determine which policies are applicable to TTS and TNVS. For example, Uber Partners and Grab Peers should be afforded concessions as smaller players in the transport industry, versus larger companies with more sizable fleets such as Sturdy and Reno.

In summary, qualitative data collection proves suitable in fully assessing the consumer context for modern private land transportation in Metro Manila. The study actualizes the key attributes that Metro Manila consumers consider and evaluate when deciding to pursue a certain service platform or brand. Most notably, the research elaborates on seconds of complex consumer decision-making into a clear and understandable hierarchy of service attribute considerations. Demonstrated on tangible brands such as traditional taxi services, Grab, and Uber, the service attributes broadly differentiate the value promise of the key options available to consumers.

The study further highlights insight into the emerging TNVS industry as a whole: Consumers do not seem to consider or evaluate brands in their entirety. Instead, consumers associate certain attributes with specific brands and prioritize those attributes depending on the service occasion. As an example, the tradeoff that consumers claim to make when choosing between Value for Money and Convenience in an urgent trip occasion is demonstration of attribute-based decision-making, versus

total brand positioning strategy, as key differentiator. This insight is crucial since it implies that a Usage, Attitude and Image (UAI) study will miss out on specific nuances of consumer decision-making, because it captures and analyzes broad brand metrics such as relevance and awareness. Instead, attribute-based decision-making is the purview of conjoint analysis, which is the accurate modeling of consumer behavior across multi-attribute alternatives (Green & Srinivasan, 1978). Specific to this study, conjoint analysis will allow for deeper appreciation of the effect of these service attributes and features on over-all consumer decision, and will be beneficial to primary stakeholders in the advancement of their service provision to consumers at large.

Lastly, the main findings have potential for further exploration through a quantitative analysis of the service attributes listed herein. Further understanding and contextualizing should also include tangential services of the brands considered in this study, specifically GrabShare and UberPool. While it is unclear whether these service options are drivers of market growth, their constant above-the-line advertisements indicate that they hold market potential for these brands, and could be classified by consumers into other service attribute categories.

Acknowledgments

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Annex 1. Qualitative Research Discussion Guide

INTRODUCTION (2 mins)
- ❏ *Welcome greetings*
- ❏ *Explain this is part of school requirements*
- ❏ *Glimpse at market research*
- ❏ *Purpose and rules of discussion*
- ❏ *No wrong or right answers*
- ❏ *Encourage participation*
- ❏ *Moderator and respondent's introduction*

DAY TO DAY ACITIVITIES (2 mins)
- ❏ What are your usual activities during the day? Weekends vs weekdays?
- ❏ Have these activities changed in the past 6 months? Why change? Why not change?

COMMUTING HABITS (7 mins)

What modes of land transportation have you ever tried?

What modes of land transportation do you use nowadays?
- ❏ How do you decide on which mode of land transportation to use
- ❏ What factors do you consider in your choice of land transportation to take?
- ❏ Which mode of land transportation do you use the most? Why?

What problems do you encounter when commuting?
- ❏ What makes this a problem?
- ❏ How do you cope with this problem?

If not previously mentioned, PROBE:
- ❏ Have you ever ridden a taxi? When was the last time you rode a TAXI?
- ❏ Have you ever tried UBER? When was the last time you rode UBER?
- ❏ Have you ever tried GRAB? When was the last time you rode GRAB?
- ❏ Have you ever tried CITYMUBER? When was the last time you rode CITYMUBER?
- ❏ Have you ever tried TRIPDA? When was the last time you rode TRIPDA?
- ❏ Have you ever tried ANGKAS? When was the last time you rode ANGKAS?

DEEP DIVE ON TAXI / UBER / GRAB USAGE (8 to 10 mins. each)
ASK FOR ONE TYPE AT A TIME. START WITH THE TYPE NEVER USED OR NOT USED IN THE PAST 4 WEEKS

NON-USAGE
- ❏ Why have you never used (TYPE)?
- ❏ What about (TYPE) prevents you from using it?
- ❏ What negative things have you heard about it?
- ❏ Are there any positive things you heard about (TYPE)? What are these?
- ❏ Where or from whom do you find things about [TYPE]?
- ❏ What would it take for you to use (TYPE)? Why? Anything else?

LAPSED USAGE
- ❑ You mentioned earlier that you have tried using (TYPE) but have not done so in the past 4 weeks. Why have you not used (TYPE) lately? Why else?
- ❑ What about (TYPE) prevents you from using it lately?
- ❑ Do you remember your first time to use [TYPE]? Can you tell us about what led you to use it?
- ❑ What problems have you encountered when you rode (TYPE)? How did you overcome these problems?
- ❑ And what positive experiences have you had when you rode (TYPE)? What about it made it a good experience?
- ❑ What would it take for you to use (TYPE) again? Why? Anything else?

CURRENT USAGE
- ❑ You mentioned earlier that you continue to use (TYPE) and have done so in the past 4 weeks. Why do you continue to use (TYPE)? Why else?
- ❑ Do you remember your first time to use [TYPE]? Can you tell us about what led you to use it?
- ❑ And what positive experiences have you had when you rode (TYPE)? What about it made it a good experience?
- ❑ What problems have you encountered when you rode (TYPE)? How did you overcome these problems?
- ❑ What things do you wish [TYPE] would do to make its service better?

COMPARATIVE EVALUATION (10 mins)
- ❑ If you were to compare TAXI, UBER and GRAB services, what are the similarities between them? How else are they similar?
- ❑ What about their differences? How are TAXI, UBER and GRAB services different from each other? How else are they different?
    - o In what ways is a TAXI better than GRAB or UBER?
    - o In what ways is UBER better than a TAXI or GRAB?
    - o And in what ways is GRAB better than UBER or a TAXI?
- ❑ If you are to rank these three types of services? Which will be your top choice? What makes (TYPE) your top choice? Why else?
- ❑ And which will be your second choice? Why is this?
- ❑ Why is (TYPE) your bottom choice? Why else?

WRAP UP (10 mins)
- ❑ Anything else you would like to add on any of the topics we discussed today?

Thank respondent