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## Largest Auto Rickshaw Markets in India (2010 data)

![Chart showing largest auto rickshaw markets in India (2010 data)]

**Note:** Numbers in brackets with city names represent 2010 population (estimated) in millions.

**Source:** WRI India Ross Center

**Source:** 2010 city population data estimated (by interpolation) from 2001 Census population (World Gazetteer, 2011) and 2011 Census population (Census, 2011). Auto-rickshaw market size (registration) data obtained from Regional Transport Offices (RTOs) of respective cities. Cities included here (Mumbai, Bangalore, Ahmedabad, Delhi, Pune, Chennai, Jaipur, and Rajkot) are those for which market-size data could be obtained from the RTOs.
Executive Summary

Three Wheels United is ready to offer electric vehicle loans in cities throughout India, but first, the company must research potential markets. To identify characteristics that influence the feasibility of expanding into a specific market, we conducted 102 interviews with drivers, potential partners, and other financiers in Bangalore, Chitradurga, Chennai, and New Delhi.

Our study revealed differences in both the regulations and infrastructure of cities as well as differences in the way drivers think and make decisions. We identified 24 factors that will influence the attractiveness of Three Wheels United’s business model and the feasibility of beginning operations in new markets. Three Wheels United can use these factors to compare different cities.

We identified 24 factors that will influence the attractiveness of Three Wheels United’s business model and the feasibility of beginning operations in new markets.

To augment this guide of written descriptions, we have included an Excel template that can be used to provide a quantitative ranking of different cities. This template contains only the quantitative factors, but the qualitative factors are equally important and should be considered separately.

We recommend that Three Wheels United to use this guide to focus on the most attractive markets and increase the odds of successful scaling efforts. Even if Three Wheels United enters a market through a partnership, these identified factors will guide the company’s long-term growth.
How to Use this Guide

Although this market evaluation guide is intended to be used before entering a market, it can be equally effective in growing Three Wheels United’s presence in existing markets. Here are the steps that employees should take.

1. Read through the guide to get a refresher on why each factor is important
2. Research each factor for the chosen city
3. Look for factors that have surprising results or that reveal gaps in the current market
4. Fill out the Excel sheet, editing weights and entering values
5. Create a report highlighting potential opportunities and challenges, and present to management

Methods

We conducted semi-structured interviews to collect data on the e-rickshaw and auto rickshaw markets in Bangalore, Chennai, Chitradurga, and New Delhi. To gain a comprehensive understanding of all facets of the industry, we interviewed a wide range of participants, listed below:

- 73 driver interviews, including TWU customers and non-TWU customers
  - Interview formats:
    - Group interviews
    - Individual interviews
    - Home visits
- 29 other interviews, featuring potential partners, other financiers/non-banking financial companies (NBFCs), loan agents, and dealerships
  - Interview formats:
    - Group interviews
    - Individual interviews
    - Office visits

We took notes during all interviews and compiled the data into Google Drive on a weekly basis. To identify these factors, we discussed observations and lessons daily, as well as trends we noticed were shared among cities.
Quantitative Factor Descriptions

The quantitative factors identified are described below. See the Excel sheet for the scoring guide for quantitative factors. Every factor has a score out of 5, and the indices of every factor are indicated in Excel to help the user determine the appropriate score for a factor. The higher the cumulative score, the better the chance of a successful expansion into a market. All of the reasonings below are general assumptions and may have exceptions.

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**Market Size & Growth**

**City Population**

Larger cities tend to have more rickshaws due to population density. The higher the total population, the more potential rickshaw customers. However, large cities can also be more saturated and difficult to penetrate.

**Total Rickshaws**

If rickshaws are already popular and frequently used in a city, TWU has better chances of finding clients.

**Total e-Rickshaws**

Drivers are often resistant to purchasing electric vehicles. If there is already an e-rickshaw presence in a market, drivers are likely to be more receptive to e-rickshaw loans that TWU provides.
Quantitative Factors - Market Size & Growth

Rickshaw Sales

If drivers are buying rickshaws, TWU can take advantage of the trend to advertise e-rickshaws and capture the market.

e-Rickshaw Sales

If drivers are starting to buy more e-rickshaws, it is a good sign for TWU to enter the market and offer loans for e-rickshaws.

Rent Proportion

TWU’s main target customers are rickshaw drivers who are currently renting their vehicles. If more drivers rent their vehicles, TWU has a higher likelihood of finding suitable loan applicants.

When evaluating each factor, look for extreme values that may represent opportunities. For example, New Delhi is India’s largest e-rickshaw market, but very few financiers focus exclusively on electric vehicles.

EV Friendliness

e-Rickshaw Sales

Permits are not required for EVs, which is helpful as obtaining permits is often a large barrier to entry. However, we arrived at this conclusion after visiting only New Delhi, so it is important to check the regulations surrounding EVs for every state.

Accessibility of Subsidies

EVs have a high initial cost compared to gas-powered vehicles. However, there are many local and national subsidies available for drivers looking to buy EVs, including e-rickshaws. If these subsidies are accessible and available, EVs are just as affordable as gas-powered vehicles, if not even cheaper.
Quantitative Factors - EV Friendliness

Existing Charging Infrastructure

Charging is one of the top three concerns of rickshaw drivers. If charging infrastructure exists or is being constructed in a city, drivers would be less worried and more likely to apply for an e-rickshaw loan.

Existing Parking Infrastructure

Similar to charging, parking is one of the top concerns of rickshaw drivers, because many of them rent their homes and do not have parking space. If there are already existing parking garages or if parking garages are being constructed, it would soothe many worries of drivers and increase the likelihood of them applying for an e-rickshaw loan.

Permit Status

Every non-electric vehicle is required to have a permit in India. However, if TWU still wants to offer loans for LPG- or CNG-powered vehicles, the permit status of a city is very important. If the permits for both gas and electric vehicles are closed, it will be difficult for TWU to offer loans. However, if permits are available for just EVs and not gas vehicles, like in Bangalore, the market is more attractive than a city with open permits for gas and electric. When only EV permits are obtainable, more drivers will be interested in owning an EV. If the permitting is open, like in Chitradurga, obtaining permits is not an obstacle.
Other Factors

Market Formality

Some markets rely more on relationships for loans while others depend on a robust network of regulated financiers. If the loan market is more informal, TWU may have difficulty entering because its operations are designed for a formal market.

Construction Presence

In New Delhi, we witnessed a staged walk-out from a SmartE hub, because drivers were protesting high daily rental rates. We later found out that construction around metro stations was hurting drivers’ incomes because of decreased driving time, and their usual customers were now scattered. If drivers are not able to repay loans due to ongoing construction, it may present as an issue to TWU’s expansion efforts.

Presence of Unions/Self-Help Groups

Unions and Self-Help Groups (SHGs) provide TWU with groups of potential customers rather than individual customers. Additionally, unions/SHGs typically improve rider perceptions of rickshaw drivers, as well as increase the accountability of drivers.

Public Transit Popularity

In New Delhi and Chennai, the popularity of the metro improves the rickshaw business by opening up a last-mile travel market to metro hubs. Drivers have found that they can make more money driving multiple riders at once for short distances rather than taking individual riders long distances. If drivers can achieve a stable income, they are less likely to default on their loan.

Scoring Using Quantitative Factors

TWU employees can find the Excel file accompanying this document. The scoring guide has been filled out for Bangalore, Chitradurga, Chennai, and New Delhi in a different tab.
Market Opportunities

Types of Vehicles
The type of engine and its popularity is important for TWU to consider. If there are more two-stroke engine rickshaws in a city, drivers may be more willing to upgrade to an e-rickshaw because two-strokes are likely to be banned soon. On the other hand, two-stroke drivers may feel that the upgrade is too drastic and may prefer to purchase a four-stroke instead. Additionally, if there are more 4-stroke vehicles, this may imply that those drivers have purchased their vehicle more recently, and may be unwilling to upgrade soon. CNG vehicles are more unpredictable, as the government does not have a clear stance on the future of CNG regulations.

Permit Situation
As explained earlier, permitting is a large obstacle. Whether or not a city has open or closed permits for rickshaws is an important distinction to identify if TWU wants to offer LPG or CNG vehicles. Typically, e-rickshaws do not need permits, but policies surrounding EVs are constantly changing, so it is important to identify the influence of permits on e-rickshaws and e-auto rickshaws.

Presence of Other Financiers/NBFCs
If there are many financiers present, it may mean that the market is saturated and will be difficult for TWU to enter. However, the presence of financiers may indicate the opposite—that the market is thriving and financiers are popping up to take advantage of the large pool of customers. If there are not many financiers in a city, it may be a strategic move for TWU to be one of the first ones there to gain customer loyalty. Conversely, if financiers have not yet penetrated a market yet, there may be underlying reasons. Why have financiers avoided operating in the region?
Qualitative Factors - Market Opportunities

Customer Acquisition Patterns

It is important for TWU to determine how existing financiers/banks acquire their customers. Currently, TWU typically uses referrals through unions or loan agent advertising to get customers. This may work in some cities, but other markets may rely heavily on dealership referrals. TWU would benefit from identifying general patterns in customer acquisition before scaling in order to customize their strategies to a city’s predispositions.

Partnership Opportunities

Partnerships, especially with aggregators, are a great way for TWU to increase their success in expanding into a new city because it typically guarantees a market that is interested in loans. However, partnerships can be blinding if they are the main factor that is considered when deciding to expand, because partnerships rely on the cooperation of another company. This is a risk, in case the company goes out of business or slows communication.

Driver Traits

Driver Perception of EVs

There are new challenges for drivers to consider when driving an EV, such as charging, the high purchase cost, and the unfamiliarity with the engine. Although these difficulties may seem daunting, they are addressable with little effort. Drivers in New Delhi have a better perception of EVs, as there is already a larger market existing. More drivers recognize the importance and benefits of switching to EV, and they understand how to manage the difficulties that may come up. A market like New Delhi would be more attractive than a market that is not receptive to EVs.

Migrant Population

Transient populations are typically a less desirable customer base to offer loans to, as their families are typically in a different state and the drivers have less tying them down to a city. However, being a migrant does not necessarily correlate with a higher risk. Migrants can be more motivated to repay the loan on time, as they often travel to cities to send money back to their families back in their villages.

General Driver Demographics

Age, family size, and physical and mental health are all characteristics of drivers that can influence their loan repayment. Generally, older drivers tend to have more health problems than younger drivers, increasing the chances that their ability to repay may be compromised. Drivers with families may be less reliable for repayments, as school fees can be very costly. However, drivers with families and older drivers may be more dependable for loan repayments as well. This factor is more vague due to the breadth of demographics that have potential to influence repayment.
Future Guide Improvements

While this guide provides a useful starting point for evaluating potential markets, additional research and fine-tuning should be done to build on the factors and scoring tool.

The quantitative scoring guide has been completed to the best of our ability from the data obtained this summer for the four cities. However, more information is needed about each market as reflected by the blank cells in the Excel sheet. These gaps can guide TWU’s future data collection efforts for market research and comparison.

Each factor in the scoring guide currently has an equal weight, but TWU staff should adjust weights based on new research, experience or findings.

The characterization of each index for the scoring system of 1-5 may need adjustment for the quantitative factors. The initial indices were created by online research to create reasonable ranges, but could be improved by a more in-depth investigation.

The qualitative factors section of the guide would benefit from ranking the factors from most to least influential because weighting them numerically like the quantitative section is not possible.