An Analysis of the Socio-Economic Aspects of Three Wheeler Market as an Informal Public Transport (IPT) Mode; Moratuwa Case Study

Amal S. Kumarage, Professor
Mahinda S. Bandara, Lecturer
Darshini Munasinghe, Lecturer

Department of Transport & Logistics Management,
University of Moratuwa,
Moratuwa, Sri Lanka

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Prof. Amal S. Kumarage
Mahinda S. Bandara
Darshini N. Munasinghe

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1. **Introduction**

In today’s world one of the most challenging problems that we face is providing optimal, efficient, cost effective and also environmentally friendly transport services. According to Aworemi, Salami, et al. (2008), the demand for public transport depends on two factors. First, “the desire to make a particular trip and to do so by public transport. Second, the characteristics and nature of the public transport modes that are available.” Providing an optimal public transport service which maximizes social welfare is a major challenge confronted with transport stakeholders in developing countries. Impoverished conditions in public transport such as bus and rail transport in developing countries have given rise to a formation of Informal Public Transport (IPT) modes. Further, increasing urbanization, population and industrial development is increasing the demand for urban transport services. As a result, demand for comfortable yet affordable public transport has become inevitably high (Hilling, 1996).

Informal Public Transport (IPT) modes are widespread social phenomena in Sri Lanka and have become an integral part of the transport sector. The most common and visible IPT mode in Sri Lanka is the use of Three-Wheelers. Even though many representatives of Sri Lankan society consider it as a nuisance; congestion of traffic, noise and air pollution, association with illegal activities, and price irregularities, from the standpoint of passengers the ready availability, flexibility in door to door service, ease in communication and “affordability” have found the grounds for the existence of Three-wheelers as an primary IPT mode.

This study examines the socio-economic aspects in Three-Wheelers from both passenger and Three-Wheeler drivers’ perspective. Researchers of this study believe that it is important to understand how Three-Wheelers exist in a competitive market environment. Moreover, due to lack of scientific investigations on this trade, the researchers presents a socio-economic profile with a profound analysis of the pricing mechanism, market structures, customer preference, trip purposes, perception of three-wheeler imports, and social exclusion of three-wheelers, from functional and structural differentiation perspectives and theories of pricing.
1.1. Methodology

Since there is no institution responsible for the Three-wheelers and their operations in the country is recent, there is a lack of studies on socio-economic data on Three-Wheeler drivers and passenger profiles in Sri Lanka. Therefore, the research team carried out a survey to gather empirical data from Three-Wheeler drivers and passengers in the Moratuwa Division. The questionnaire was designed to gather demographic, economic and social data from both Three-Wheeler passengers and Three-Wheeler drivers from the Moratuwa division. Beside primary data, secondary data such as Central Bank reports, Census and Statistics Reports, Vehicle registration statistics and Urban Transport Study Reports are been used to understand and analyze trends. Due to time and resource constraints the survey was administered to a sample of 200 Three-Wheeler drivers and 100 passengers recruited face to face at convenient locations, including, supermarkets, markets, three-wheeler stands, bus stands, shopping centers, and near schools. These interviews were conducted in April 2008 by undergraduate students of the school of Social Services Sri Lanka. Triangulation (interviews and observation) method was used to gather accurate data, even though field work was carried under direct supervision of key researchers there is no simple and feasible way to check for potential bias in sampling, since conscious effort has been made to ensure that sample is representative as possible. Therefore, this study should be considered as exploratory research design that is able to provide insightful and useful information.

1.2. Organization of the paper:

This paper proceeds on the introduction to IPT in developing countries, followed by the IPT in Sri Lanka, Three-Wheelers (TW) in Sri Lanka. Next section provides the research findings in two categories; commuter’s perspective and TW drivers’ perspective with a section of sociological and economic analysis of the findings. The last section presents the conclusion and final remarks of the project.
2. Informal Public Transport Modes (IPT) in Developing Countries

2.1. Background

In recent years a range of terminology has been introduced for what is called ‘Informal Transport modes’ such as intermediate, unincorporated, pare-transit, unregulated, low cost and informal high occupancy modes. Above mentioned terminology has been interchangeably used to identify vehicles and operational systems which fill the gaps between the mass-public transports systems, whether road, rail, non motorized transport (Ocampo and Wright in Hilling, 1996). In many developing countries not only do we see the variation in terminology, but also a greater variety of technology. IPTs can be broadly classified into two types: non-motorized and motorized. Both these can be subclassified into 3 types based on their seating capacity such as Individual type (seating capacity less than 4), shared type (seating capacity 5-10), and collective type (seating capacity 11-20) (Shimazaki and Rahman, 1996).

Each country has its own distinctive forms of informal transport modes. As Shimazaki and Rahman states the most logical and precise definition of IPT is that “Para-transit is urban passenger transportation services usually in highway vehicles operated on public streets and highways in mixed traffic; it is provided by private or public operators and it is available to certain groups of users or to the general public, but adoptable in its routing and scheduling to individual user’s desires in varying degrees”. Filipe, et al refers to informal transports modes as “transport services or modes which are unregulated and often illegal, acting in free market competition with other informal services as well as with the formal ones, usually emerging in areas of low income populations, in cities in developing countries, or areas left unserved by traditional services”. Valenzuela, Jr. et al (2005), describes community based informal transport systems as travel services arranged among individuals who agree to prices prior to the trip, routes, and schedules case by case basis by word of mouth and without government oversight.

Based on these explanations it is clear that IPTs falls under unregulated or underground market economy. Informality defines as the unregulated, often underground and illegal provisions of services ranging from housing to commerce. It relies more heavily than the formal sector on traditional knowledge and resources, family labor and ownership, small-scale operations, labor intensive techniques and offers low barriers to entry for potential
participants (Rakoski in Goulb, 2003). The common perception on underground economic activities are that it is associated with drug trafficking, illicit distilling of liquor and other criminal activities however, it a mistake to use these terms interchangeably since informal sector refers to legitimate commercial activities such as driving taxis, selling clothes on the street and so forth that are carried out without complying with all of the technical, legal requirements, such as having license and paying taxes (Litan in Sandarathne 2001). However, Sandrathene argues that even though informal and underground economic sectors are not synonymous, the underground economy is a part of the informal economy. Numerous studies in developing countries have shown that there has been relationship between informal economic activities and underground dealing such as transporting illegal immigrants, drug trafficking, robberies, etc. Even so it should be noted that not all the IPT modes are involved in such behaviors. Due to its nature these transport modes are prone and vulnerable for forced or unforced illegal acts. Many scholars argue that there are several factors that contribute to the emergence of IPTs. First, Intermediate Public Transport modes have emerged spontaneously to fill perceived gaps in the conventional transport provisions in the urban areas. Growth in urban population and inadequate transport supply has become one of the major contributing factors for the rise in IPT markets (Hilling, 1996). Second, increased per capita income has greatly influenced the rapid increase of transport demand within the urban areas. Third, overcrowding, insufficient maintenance, poor management, and inadequate investment in existing transport infrastructures have stimulated the growing transport demand and last, the lack of appropriate planning for metropolitan transport systems for the most cities in developing countries due to the requirement of huge capital investment (Shimazaki and Rahman 1996). For instance, in mid-1970s due to inability of the conventional bus services to satisfy growing demand, privately owned mini-buses were introduced in Kuala Lumpur. Introduction of mini busses was a possible investment for local entrepreneurs, and viable job market. Moreover, since being non-unionized, the mini-busses had a flexibility to provide services for some route that had been excluded by the municipals. In Asia, motorized IPTs are most dominant in cities except Dhaka in Bangladesh and Kanpur, Jaipur in India. The passenger’s carrying capacity by motorized IPT modes
varies from 20 percent to more than 50 percent of total public transport demand. For instance 70 percent of the total IPTs transport demands in metro Manila, Philippines, 50 percent in Jakarta, Indonesia, 40 percent in Kuala Lumpur, Malaysia and 21 percent in Bangkok Thailand. Therefore, their popularity as a public transport cannot be neglected as it carries a significant number of passengers. The special features of IPT systems in the developing countries are their flexibility and door to door service and in some cities it generates a considerable percentage of employment opportunity and also it does not require much public resources which is a major attraction in many cities of developing countries with shortage of funds (Shimazaki and Rahman 1996).

2.2. Informal Public Transport in Sri Lanka

In Sri Lanka most visible informal transport mode is Three-Wheelers. So is Auto Rickshaws in India. However, the local or regional name for Three-Wheelers in Sri Lanka differs from context to context. Therefore, the mass public in Sri Lanka will use terms such as Tuk-Tuk, Trishaw, Auto, Rickshaw, Bajaj or Wheel, to a Three-Wheel. Apart from Three-Wheelers, there are organized private cab/taxi services that provide cars, and vans for long or short term travel purposes. Further, there are privately owned Vans and Buses that provide transport for school children and office workers on a monthly agreed payment. All these formations of informal transport modes are a result of few factors such as of inability to provide optimal formal public transport services, individual preference for entrepreneurship, self employment, passengers concern for a quicker, safe and comfortable journey, and affordability.
2.3. Three-Wheelers in Sri Lanka

Three-Wheelers entered Sri Lanka in late 1980s and early 1990s, and there are an estimated 342,286 Three-Wheelers in operation by 2007 (Central Bank Report 2008). Three-wheeler owners initially register their vehicle with the Commission of Motor Traffic (CMT). Drivers also receive their license from CMT, although there are many unlicensed drivers. Every year thereafter, three-wheelers must re-register with the provincial CMT. However, none of the provincial councils has set any limits to the number of Three-wheelers that can be registered and as such; the number of three-wheelers in Sri Lanka has expanded from 250,822 in 2005 to 290,954 in 2006 (Central Bank Reports 2007). Due to recent identification of three-wheelers as a get-away vehicle in most crimes, three-wheelers are now required to register with the each operating police division (Sunday Observer, March 02, 2003).

Three–wheeler growth continues because they serve a need in urban and rural areas as an IPT service since the bus and rail systems are failing to meet riders’ needs. They are a source of employment for many, a cheap mode of transport, and at this time, impose very little burden on the government as opposed to busses and trains which require subsidies and oversight. However, they operate unsafely, swerving into and out of traffic to pick up passengers, making illegal turns, and allowing passengers to disembark from the right side. According to the Traffic Police Reports in 2004, over 50% of the accidents in the western province were related to the Three-wheelers and 51% of the traffic violations were committed by the three-wheeler drivers. Apart from those they also increase the traffic congestion; stops everywhere to pick up or drop off passengers, drives slower than the other vehicles, drives around empty looking for customers, often drives in the right lane and pass traffic congestion on the right.

At present three-wheelers are completely unregulated by the government or any other agency. Fares are negotiated for each trip, although there have been some discussions regarding the implementation of the meters, but previous attempts have failed. The Study on the Urban Transport Development of the Colombo Metropolitan Region in the democratic Socialist republic of Sri Lanka 2006 reveals that, 91.5% of three-wheeler drivers are full time drivers and profit that they make are only earning and constitute their
livelihood. 92.5% of three-wheelers are 2-stroke engines which has higher emissions than 4-stroke engines. 62% make between Rs.201-500 per day, which is slightly more than the poverty line. According to a study on the operations of Three-wheelers in Sri Lanka, 1990, household expenditure on IPT use has also increased. Further, the study notes that based on the household expenditure statistics, three-wheelers are mostly used by the lower-middle and middle-class people. In Sri Lankan transport context three-wheelers are generally considered as the poor person’s vehicle for his or her transport needs (Samarasinghe, Samarakkody, et al 1999).
3. **Research Findings**

Survey findings are presented in two categories; commuters’ perspective and Three-Wheeler drivers’ perspective.

3.1. **Socio-economic Characteristics of Commuters**

The socio-economic characteristics of commuters are analyzed in terms of their gender, age, occupation, monthly expenditure, hire arrangement communication method, and whether they own a private vehicle or not. According to the survey findings 53% of the passengers are females and 47% males. This should however not be interpreted to imply that there are more female commuters than male commuters in this Moratuwa division. It simply reveals that more females than male commuters responded to the questionnaire (Table 1).

The age structure of the respondents show that 97% of the commuters belong to age group of 15-60 years, and possibly explains the predominance of shopping trips, getting to work, getting to bus or railway stand, and use of TW when public transport is unavailable in the analysis.

When concerning commuters occupational categories, housewives/unemployed are predominant. Which perhaps suggest that unemployed/housewives have low accessibility (majority female commuters in the sample) to private transport. Therefore they prefer to use TWs.

Monthly expenditure on TWs on average ranges from Rs.100-1599. Since majority of the trips are not made daily monthly expenditure correlates with the trip purposes. Commuters have a tendency to use a TW when they need to go shopping, to the hospital, getting to bus or rail stations or going to work when there is no public transport available.

Therefore, commuters’ monthly expenditure and TW use is an urge driven phenomenon. However, there are extreme occurrences such as paying over Rs.8000 or more on TWs opposed to less than Rs.1600 per month. Further analysis with such subjects reveals that
they own private vehicle and yet prefer to use TWs since it is cost effective and finds less trouble in finding a parking slots.

Most preferable method (28%) of communication when arranging a hire is that going to TW stand where TWs are lined up and takes turns. Also 21% prefer to arrange their hires by calling the known TW drivers’ mobile phone. This method of hire arrangements are increasing due to many reasons, due large number of TWs are in a particular stand hire turns are slow. Therefore, TW drivers prefer to make connections with customers and go off their turn when a customer call. From the commuters perspective many prefer to ride with a known TW driver. Such preferences can be justified since there is common fear amongst the general public to use a TW since there have been many crimes, such as abductions, rapes, robberies, and drug smugglings associated with TWs. Moreover, due to ready availability of TWs, passengers have a trend in waving the hand and making travel arrangements with TWs. Such gestures have become meaningful and significant in today’s social context. 

Individuals’ behavior such as waving a hand at a TW has become subsequent indicator/stimuli to TW driver to stop and pick up the passengers.

Amongst the commuters 48% revealed that they own a private vehicle and 52% stated that they do not own a private vehicle. This 48% reveals the socio-economic status of the commuters. Especially in Sri Lankan social context owning a vehicle is considered as a symbol status and an indicator of economic stability. However, it was interesting to study this 48% TW use and trip purposes. 60% of this group uses the TW to get to work, and rest uses it to send children to school, get to the hospital at an emergency situation. This none use of their own vehicle for above mention trips could be a result of current high cost of living, increasing oil prices, and inflation.

Based on the above mentioned socio-economic characteristics, the general use of TW varies mainly due to urge driven trip purposes regardless of the passenger’s gender, age, and occupation. However, there are other socio-economic aspects such as the appearance of the TW and the driver, hire fares, existence of cab services, and the perceptions of the TW industry that determines choice of commuters’ use of TWs. Those passenger perceptions are analyzed and presented in the next section onwards.
Table 1: Socio-Economic profile of Passengers

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>53</td>
</tr>
<tr>
<td>Male</td>
<td>47</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
<tr>
<td>(ii) Age</td>
<td></td>
</tr>
<tr>
<td>16-20</td>
<td>8</td>
</tr>
<tr>
<td>21-30</td>
<td>29</td>
</tr>
<tr>
<td>31-40</td>
<td>31</td>
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<tr>
<td>41-50</td>
<td>16</td>
</tr>
<tr>
<td>51-60</td>
<td>11</td>
</tr>
<tr>
<td>61-70</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
<tr>
<td>(iii) Occupation</td>
<td></td>
</tr>
<tr>
<td>Students</td>
<td>11</td>
</tr>
<tr>
<td>Housewives/ Unemployed</td>
<td>26</td>
</tr>
<tr>
<td>Office workers</td>
<td>24</td>
</tr>
<tr>
<td>None- office workers</td>
<td>24</td>
</tr>
<tr>
<td>Self employee</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
<tr>
<td>(iv) Monthly Expenditure on TWs Rs.</td>
<td></td>
</tr>
<tr>
<td>Below 99</td>
<td>6</td>
</tr>
<tr>
<td>100-1599</td>
<td>67</td>
</tr>
<tr>
<td>1600-3099</td>
<td>20</td>
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<tr>
<td>3100—4599</td>
<td>3</td>
</tr>
<tr>
<td>4600-6099</td>
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<tr>
<td>6100-7599</td>
<td>1</td>
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<tr>
<td>7600-9099</td>
<td>1</td>
</tr>
<tr>
<td>(v) Private Vehicle Ownership</td>
<td></td>
</tr>
<tr>
<td>Owns a vehicle</td>
<td>48</td>
</tr>
<tr>
<td>Do not own a vehicle</td>
<td>52</td>
</tr>
<tr>
<td>(vi) Hire Arrangement Method</td>
<td></td>
</tr>
<tr>
<td>Mobile Phone(1)</td>
<td>21</td>
</tr>
<tr>
<td>Verbal contract(2)</td>
<td>8</td>
</tr>
<tr>
<td>Random stops(3)</td>
<td>19</td>
</tr>
<tr>
<td>TW Stand (4)</td>
<td>28</td>
</tr>
<tr>
<td>1&amp;2</td>
<td>2</td>
</tr>
<tr>
<td>1,3&amp;4</td>
<td>2</td>
</tr>
<tr>
<td>1&amp;4</td>
<td>3</td>
</tr>
<tr>
<td>2&amp;4</td>
<td>1</td>
</tr>
<tr>
<td>3&amp;4</td>
<td>15</td>
</tr>
<tr>
<td>1,2,3,4,5</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: Field Survey April 2008
3.2. **Passenger Perceptions of Satisfaction on Three-Wheeler Fares**

**Current Scenario:**

TW are not regulated by any government agency or any other organization. However, ad hoc formation of a TW society at a particular stand has brought in some the over hire charges. TWs operating at a particular stand have agreed upon charges and they all tend to adhere to it. As a result, when oil prices increase these TW drivers increase their fares over proportionately to oil price increase, which ultimately results in the burden being passed on to the passengers. Since most of the TW trips are urge-driven, commuters are in a weak position to bargain and there is no responsible authority to complain such unfair practices (Sri Lanka Guardian 2008).

3.3. **Passenger Satisfaction of TW fares:**

According to the survey findings, 20% passengers stated that they are not satisfied at all while 39% said that they are somewhat satisfied (See Figure 1). When inquired why this 59% are not satisfied with the TWs they divulged that TW fares are high and unreasonable (34%), no standard price (same distance different hire charges 24%) and 42% stated that TWs increases their fares disproportionably when price of oil increase. However, it is interesting note that 41% of responded commuters are satisfied (including completely satisfied commuters) with the TW services. When cross checked for this group of satisfied commuters’ profile, their method of arranging TW hire is by going to a TW stand where all TW drivers charge the same amount for the similar distances. Therefore, there is very little chance for commuters to witness price differences.
3.4. Three-Wheeler Exterior and Passenger Choice

Three-Wheelers in Sri Lanka are most visible and embellished with gaudy decorations, mirrors, inscription and often the loudest vehicle on the road. As a result of such appearances Three-wheelers are seen as a unified sub-cultural unit of the mass culture (Unpublished Thesis, Dept of Sociology University of Colombo, 2006). This sub cultural unit has their own set of dialects, popular music, radio shows, and clothing and accessory styles. During the field survey, it was inevitable noticing and hearing loud Sinhalese and Hindi music that played in the TW with a big speakers assembled right by the rear passenger seat. Further, it was observed by the researchers that passenger seats had been modified with cushions and covers, original drivers’ seat has been removed and replaced with driver’s seat of a car or van, interior walls of the TW is posted with inscriptions, posters of popular artists, pictures of babies, and sometimes decorated with artificial flowers. At the front of drivers’ compartment they usually have a religious figure, and side mirrors are decorated with military stickers or some figure of an artist. Drivers of TWs are mostly dressed in shorts, denims, sarongs, and sleeveless shirts or t-shirts or shirts. Often, young TW drivers tend to have long hair and pierced ear with tattoos on their arms. By dressing in a particular way these drivers have created an identity for themselves. According to their perspective such identities have positive and negative impacts on their lives. For instance one Three-Wheeler driver sadly stated that,
“It is very difficult for me to find a woman to marry, when parents or the girl ask what I do for living, they immediately reject my proposal…. People think all the TW drivers are gangsters and they all give stares at us”

According to the survey data, it reveals that 90% of the commuters are concerned of the exterior of the TW and 62% of commuters are concerned about the appearance of the TW driver. As a result the dominant perception of the TW drivers and the exterior of the TW determine the selection of the passenger’s ride. One TW driver shared his thoughts saying,

“If I want to attract the customer I need to appear pleasantly, keep my TW clean and neat and I don’t play unbearable loud music inside my wheel”.

3.5. Three-wheelers and Cab Services

Cab service providers in Sri Lanka are not regulated by any government agency similar to the situation of TWs. Thus, this IPT mode does not cater to all strata’s in a society as TWs. Primarily due to readily unavailability on demand, language use among the operators, prior need to communicate via phones and public’s perception of higher fares been charged.

Majority (59%) commuters in research sample revealed that they do not use cabs because there charges are high. 27% of the sample said that they do not use cabs since they are not readily available as TWs. Rest of the commuters are in opinion of cabs are not secure and there is no need to use.

When researched about the hire charges from the cab service providers their starting price per kilometer is Rs.52-64. Further, if a person hires a van with or without dual air conditioning it cost less than Rs.50 on average per kilometer. According to the survey findings a commuter on average is willing to pay Rs.52 per kilometer. So, based on these actual figures and how much commuters would pay per kilometer on TW ride, TW charges could be more or less the same as cabs. Thus, the charges could be less than a TW ride if the passenger wishes to use a Van of these cab service providers. Therefore, it is evident that commuters have a superficial fear to use cabs opposed to TWs and other factors such as unavailability of cabs on demand, public unawareness of existing cab providers, no advertisements displaying hire charges, cost to make a telephone call, not
knowing the local cab service provider numbers, and people’s opinion of ‘cabs are for high-class, English speaking people could be contributing to the non-use of cabs.

3.6. Passenger Perception of the Overall Service Provided by the TW

The survey findings disclose that 67% of the commuters are happy with the overall service of the TWs in the Moratuwa division. 23% said that they are not happy with the TWs due to reasons such as unsafe moves that they make while driving on main roads, disobeying the traffic rules and regulations, unfair hire charges, no standard price mechanisms, and vehicle itself is unsafe. The rest of the commuters have a mid opinion about the TWs in general. It was interesting to observe that 67% of the sample are satisfied with the overall service provided by the TWs despite the negative impression that TWs possess. From passenger’s perspective TWs plays vital role in transport sector. When commuters are unable to meet their day to day socio-economic needs using public transport, TWs comes into play.

In summary, the research findings affirm that commuters believe that TWs plays a vital role in the transport sector. Despite the negative impressions of the market such as some TW drivers association to crimes, commuters use TWs for their day to day socio-economic needs such as going shopping, to work, and to school. Often TWs plays the role of connector to the main public transport services such as bus and railway stations. According to the Structural-functional approach—a framework for building theory that sees society as a complex system whose parts work together to promote solidarity and stability-TW industry is one of the key social structures that stabilizes the transport sector. TW industry as a social structure shapes and provides commuter’s transport needs that can not be met by the public transport services.

It was evident from the TW drivers’ testimonies that if the TW drivers make conscious efforts to present their TW driver identity positively, more passengers could be attracted. For the passengers, the appearance of the driver and exterior of the TW are crucial when deciding a hire with a particular TW. Most of the commuters have no clear ideas about the pricing mechanism and they often feel that they are been over charged. However, from Marxist perspective commuters perception can be seen as a form of being alienated...
by the TW market process—where the commuters feel powerless in demanding to lower the hire charges or asking them to ride the TW according to the laws and regulations on the road traffic.

Commuters’ preconceived fear of “cabs charge higher prices” deters them switching into a transport mode which is much safer and comfortable. The very nature of TWs; readily availability, ability drive in any road condition and every hook and nook, flexibility in communication, flex working hours, and ability negotiate makes the TW exceptional to any type of commuter from any social class.

3.7. Socio-economic Findings of TW Drivers

Socio-economic characteristics of the TW drivers are analyzed in terms of age, marital status, educational level, daily income on average, job satisfaction, employment category, and the ownership of the TW.

3.8. Socio-economic Profile of TW-Drivers

According to the data, majority (39%) of the TW drivers belongs to the age bracket of 29-38 years. As shown in Table 2 over 90% of the TW drivers are in the active working age group. When crosschecked with their age and number of year at this employment it was found that majority of the drivers have started this career at the ages of 18-21 years. This result correlates with their education level and the age of entering into the TW market. When considering TW drivers’ education level majority of them have passed the General Certificate of Education-Ordinary level (GCE-O/L), and have not even attempted in perusing the Advance Educational qualification (GCE-A/L). In Sri Lanka, generally for a person to be employable, passing results in A/L and credit pass in Math and English is a requisite. As a result, this group of TW drivers must have undergone a difficult time in finding a job. It can be assumed that they have idled two-three years after O/L examination, searching for a job and when failed they must have opted for driving a TW. This assumption can be justified with survey findings. When inquired why they chose this job, 34% of the sample said that it was difficult to find any other job, 33% said they do this job since it is easy, and 14% mentioned that income level of this job is good so
they got into it. Therefore, it reveals that driving a TW is seen as an economically viable option for the less educated proportion of the society.

Survey results portray that 79% of the TW drivers are married while 21% are unmarried. Amongst the married the TW is their livelihood and this is their fulltime job. About 1% of unmarried TW drivers are part-time TW drivers where they make another living by working as laborers, carpenters, and waiters.

In the sample 70% of the respondents own the TW, thereby their obligation to pay a monthly or daily fee to the actual owner of the TW is zero. The rest of the sample uses the TW of someone else to make a living. For them, they are required to make a daily payment of Rs.250 on average for the owner. The 70% of the TW owners feel that owning a TW for themselves is some sort of achievement while it also indicates some social status among the lower income groups.

The daily income of the TW drivers on average of this sample is Rs. 667.50. However, 39.5% of the TW drivers earn Rs.600-899 per day, while the 35% earns Rs. 300-599 daily. When collecting this information, many TW drivers stated that it was very difficult for them to mention a steady revenue figure since their daily income totally depends on the number of hires that they get and the mileages driven. Association between income level and job satisfaction shows that TW drivers who make below the daily average are dissatisfied with their job while the ones who make over the average are satisfied with what they do for living.

Moreover, few TW drivers divulged that there are some days that they take risk and engage in smuggling drugs, and provide transport facilities to prostitutes, where they make over Rs.1000 over one trip. Based on this information the income of the TW drivers may differ from day to day and since their income is not recorded they could be earning more than stated in the survey and yet not pay any government income taxes.

TW market inherits the informal market economic characteristics. The International Labour Organization (ILO) defines informal sectors as, “small scale units engaged in the production and distribution of goods and services with the primary objective of generating employment and income to their participants withstanding the constraints on capital, both physical and human”. From an economic perspective TW market in Sri Lanka can be categorized under the informal market sector where it generates income and
self-employment opportunities to many lower-income levels. Thereby this market that occasionally intriguing, and sometimes chaotic, serves as an integral part of the lives of many low income categories and commuters who seek alternate transport modes to use when the public transport fails.

**Table 2: Socio-economic profile of TW Drivers**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(i) Age Structure</strong></td>
<td></td>
</tr>
<tr>
<td>19-28</td>
<td>28</td>
</tr>
<tr>
<td>29-38</td>
<td>39</td>
</tr>
<tr>
<td>39-48</td>
<td>23</td>
</tr>
<tr>
<td>49-58</td>
<td>8</td>
</tr>
<tr>
<td>59-68</td>
<td>2</td>
</tr>
<tr>
<td><strong>(ii) Marital Status</strong></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>79</td>
</tr>
<tr>
<td>Unmarried</td>
<td>21</td>
</tr>
<tr>
<td><strong>(iii) Education Level</strong></td>
<td></td>
</tr>
<tr>
<td>Pass O/L</td>
<td>34</td>
</tr>
<tr>
<td>Studied up to O/L</td>
<td>22.5</td>
</tr>
<tr>
<td>Passed A/L</td>
<td>3</td>
</tr>
<tr>
<td>Studied up to A/L</td>
<td>7</td>
</tr>
<tr>
<td>studied up to 10th Grade</td>
<td>28</td>
</tr>
<tr>
<td>Other</td>
<td>5.5</td>
</tr>
<tr>
<td><strong>(iv) TW Ownership</strong></td>
<td></td>
</tr>
<tr>
<td>Owns the TW</td>
<td>70</td>
</tr>
<tr>
<td>Does not own TW</td>
<td>30</td>
</tr>
<tr>
<td><strong>(v) TW drivers Employment Type</strong></td>
<td></td>
</tr>
<tr>
<td>Full Time TW drivers</td>
<td>84</td>
</tr>
<tr>
<td>Part Time TW drivers</td>
<td>16</td>
</tr>
<tr>
<td><strong>(vi) Daily income on Average</strong></td>
<td></td>
</tr>
<tr>
<td>300-599</td>
<td>35</td>
</tr>
<tr>
<td>600-899</td>
<td>39.5</td>
</tr>
<tr>
<td>900 -1199</td>
<td>12.5</td>
</tr>
<tr>
<td>1200-1499</td>
<td>3.5</td>
</tr>
<tr>
<td>1500-1799</td>
<td>2.5</td>
</tr>
<tr>
<td>1800-2099</td>
<td>1</td>
</tr>
<tr>
<td><strong>(vii) Job satisfaction</strong></td>
<td></td>
</tr>
<tr>
<td>Not Satisfied</td>
<td>36</td>
</tr>
<tr>
<td>Satisfied</td>
<td>59</td>
</tr>
<tr>
<td>No comment</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Source: Survey Data April 2008
Besides the demographic, social and economic profile, other dimensions like Three-wheelers and social exclusion, TW drivers’ opinion on TW imports, job aspirations, and issues in the TW industry will be presented next section onwards.

3.9. Three-Wheeler Imports

Survey data reveals that 61% of oppose the TW imports and 39% supports the TW imports. When inquired why they resist the imports they expressed many ideas. The general perceptions of the TW drivers are been grouped and presented in their own words, below.

Many said that “it would be better for the economy if TW can be made in Sri Lanka” Others said that “there are so many TW in the market now, as a result it challenges the daily income; more TWs mean less hire turns”. Some argued that “new TW imports only increase the traffic jam, government should limit imports”. TW drivers who agree with the imports shared their thoughts saying that “buying a TW is one’s choice and freedom, also, TW has created lots of employment opportunities” and many said that “this is the only vehicle that is affordable for the poor”

![Figure 2: TW Drivers' Opinion on TW Imports](image)

According to the central bank reports 2007, there is a decrease in new registration of TWs. In 2006, there were 64,466 new TW registered and by 2007 the number has dropped to 43,068. This could be good sign for the existing market where there will be less competition for hires.
3.10. TW Drivers’ Job Aspiration

According McLelland, a psychologist who questions “which group is ultimately responsible for the economic modernization of the third world countries” argues that it is domestic entrepreneurs, not politicians or western advisors who will contribute to the economic modernization. Thus, he states that a researcher needs to go beyond the study of economic indicators and study the entrepreneur (So, A 1990). TW drivers can be considered as entrepreneurs since they have somehow struggled to buy a TW with loans, and many leasing methods and have used that to make a living out of it. During the survey TW drivers were asked to state their job aspirations. 52% stated that they want to be able to live a good life, earn some money and start own business. Amongst the other 48% there were a mix of ideas, where some shared that they want to buy a new TW, build a house, go abroad, buy a new vehicle, and save money and find a new job. McLelland notes that “only when a person thinks about how to improve their present situation or how to perform an existing task in a better way can it be said that he or she has strong achievement motivation.” Based on this definition and TW drivers responses, there is no argument that TW drivers in the sample have a trait of achievement motivation. This fact can be also interpreted in another viewpoint, which is TW serves as a transition job where some people use it to achieve their next level of social and economic goals (Maslow: Hierarchy of Needs).

3.11. Three-Wheelers and Social Exclusion

Prevailing social hierarchies, inequalities and discriminations are impacting the TW market largely. This impact can be tracked down to the commuter as well as to the TW driver. Philo in Raje defines social exclusion as a situation in which certain members of a society are, or become, separated from much that comprises the normal round of living and working in that society (2004)

In Sri Lankan society, TW is considered as poor man’s transport mode. The stereotypical TW driver is perceived as a thug or gangster who plays loud music, smuggles drugs, and even dresses like a thug. These perceptions have created a barrier to full participation in
day to day social activities. For instance certain five star hotels prohibit TWs entering the hotel premises. As a result, commuters are also expected to get off and walk the rest of the way to hotel. In contrary, the cab services which provide the same type of service to the commuter are allowed to drive up to the hotel entrance. This double standard policy in a society discriminates certain groups of commuter and drivers who uses TW as their transport mode. Such action prevents this group’s privileges which could be benefited by any person regardless of what type of vehicle that he or she drives.

During the survey it was discovered that when a new TW driver set into the TW market, if that person is not a native of that division, there are threats, arguments, and sometimes political influences to move the TW to a new locality. Therefore, in this particular market, freedom to establish a new service is determined by locality, political connections, and some sort of introduction by a fellow TW stand member. The survival of the new TW driver depends on the above mentioned factors.

As mentioned above, TW drivers’ stereotype negatively impacts them when they deal with Police officers and other government officials. At the interviews they mentioned that many officials condemn, neglect, and often reject their concerns. For instance when they go to the police station they are kept waiting for long hours to register their TW and also when their driving license are taken for any violation of road traffic they are been fined and delays the issue of the license. According to their view it is mainly because of the public feeling that driving a TW is not a respectable job and people who do so are thugs. As a result of this perception they are been mistreated, often neglected and discriminated.
4. Economic Aspects of the Three – Wheeler Market

Economic aspects of the three-wheeler market are discussed in the proceeding two sections. In the first section a comprehensive approach to the operation of three – wheeler market is applied and investigates economic aspects in terms of three – wheeler operators (Supply side aspects of the three-wheeler operation). Second section is devoted to analyzing three-wheeler commuters (Demand side aspects).

4.1. Aspects from Supply Side of the Three – Wheeler Market Operation

The section deals with occupational choice of three-wheeler operators, ownership of the vehicle and market for three-wheeler operation, out of which market for three-wheeler is studied under different segments; barriers in the market, competition, price determination, fare discrimination and variation, revenue and cost structure of three-wheeler operation and the possibility of regulating the market for three-wheeler operation.

4.1.1. Job Preferences and Aspirations of Three-Wheeler Operators

Occupational choice is an important factor if one expects yields of high productivity of labour. However, three –wheeler operation presently consists of unskilled persons with sufficient educational background and no formal training. Hence the study focuses on three-wheeler drivers ‘choice on working’ as a service operator. Many of the drivers opted operating a three-wheeler as a full time employment while others engage in driving as a part time employment. Figure 3 illustrates the number of years operators in service. It is found that around 85% of respondent works on fulltime basis and the rest is on part time basis. Those who are on full time basis responded that they have been engaging in the operation, on average, for over 4 years. According to the statistics, 46% of them are working for 4 years and 21% has been serving for 8 years. More interestingly 10% of three-wheeler drivers have been operating for 20 years.
As far as job mobility among these drivers is concerned, most of them had previous jobs and they have shifted to driving three-wheelers. The investigation went on to find out as to why they shift from those occupation to three-wheeler operation was revealed that operating a three-wheeler is not a very demanding job and also bring in a good income under no obligations.

Choice of occupation is based on several parameters. Among them, income, job satisfaction and other perks and benefits received from the employment are highly influential in determining choice of occupation of an individual.

Operating a three-wheeler being a self employment for many of the operators, several factors have affected individuals to choose it as a profession. 36% of respondents answered that they opt for three-wheeler service since the operating a three-wheeler is an easy job and it provides them good earnings.

However, as far as job satisfaction is concerned, 39% of three-wheeler operators mentioned that they are unsatisfied with the job while 61% of them are engaged in service with some level of job satisfaction.
Figure 4: Reasons to opt for three-wheeler operation as an employment

Long term existence of an economic activity can be assured on the availability of resources to its sustained operation. Among the resources the labor is vital. The study therefore researched on the number of years the operators expected to provide the service. The number of years three-wheeler operators expected to remain in the service will elucidate the future existence and the prevalence of the three-wheeler operation in the transport system. The findings on the job continuity are shown in figure 3. As per statistics, 36% of operators revealed that they are willing to remain in the service considering operating a three – wheeler as a life time employment. However, 18 % of respondents revealed that they remain in the service until they find a relatively better job for their livelihood while another 19 % are willing less to continue over 10 years of service.

Thus, by conclusion, three-wheeler operation provides the unemployed a job market. Accordingly the analysis made on three-wheeler operators suggests that, on average, 37 % operators who stay in their early stages are not willing to provide the service consistently over their life time and willing to move out for a better opportunity. This nature of market behavior reveals that the three – wheeler market provides young job seekers with a certain education level, a transition hub for finding employments while earning a sufficient income package. In contrast some countries in Latin America such as
in Brazil, the informal transport operation have been another working opportunity for retired civil servants (Ribeiro et al, 2005).

Figure 5: Job continuity of three-wheeler operators - The Long term existence of three-wheeler in the transport system

4.1.2. Ownership of the Three-Wheeler

Ownership of a factor of production generates income flows to the possessor of the resource. Owning a transport asset in that aspect provides an income flow only if it is used in providing transport services at a particular price. Hence owning a three-wheeler undoubtedly provides an income flow to the owner. The study therefore intended to investigate on the ownership of three-wheelers operated in the selected survey area in order to divulge the income status of the operators and identified the ownership status as in figure 4.

The study found that 72% of three-wheelers interviewed are owned by the operator itself but 28% are owned by any other party.
Figure 6: The status of ownership of the three-wheeler

Owning an asset incurs a capital cost to the buyer. Being a relatively cheaper asset in transport market, three-wheelers have been in sale for many years from its introduction to the country in 1982 (Samarasinghe et al, 2000). The study focused on the purchasing power of the operators who own the three-wheeler and revealed as shown in figure 7. 40% of the operators responded that they have purchased the vehicle on cash while 47% of them revealed that purchase is made with the help of leasing schemes and 12% are on loan schemes.

It is evident from the second fact that the three-wheeler market has been a targeted market for financial institutions providing leasing and loan services.
4.1.3. Market for Three-Wheeler Operation

The study mainly focused on the particular locations at the study area where operators are collectively sharing a parking place. The operation is more likely to a cartelized service provision. It is found that some three-wheelers are registered to a particular park and some are not. It provides sufficient information regarding their unionized operation but the influence is limited to the particular park. It is revealed that 74% of operators interviewed are registered to a particular park while the rest is not registered but still they are in operation by parking the vehicle at arbitrary locations.

Identification of customer base of a particular business helps marketers to offer different choices to consumers with discriminated prices. In regulated transport markets such as railway service and airline services, it is clearly put into practice. However, being an unregulated segment of the public transport, this is not visible and not in practice in the three-wheeler market. The study focused on identifying passengers based on the frequency of use.
63% of operators responded that most of the customers are daily users while 22% of operators responded that most of their customers are use the service infrequently. Promotion of e-business and telex-business is seen in the organized markets as marketing strategies. The study investigated the prevalence of market strategies or practices in the three-wheeler market. Interestingly around 27% of operators revealed that they give their contact phone numbers to passengers in order to contact them when required. However 73% of operators do not practice it, according to their opinion, most of them do not use mobile phones and it creates an extra journey to pick commuters.

4.1.4. Barriers to Entry in to the Market

Organized markets are characterized by different features. Barriers to entry are one of such feature seen mostly in contestable markets. More importantly in transport market, it is seen that cartelized shipping services influenced new entrance to the industry by pricing practices (Button, 1982). Identifying barriers in informal public transport has been researched but based on empirical observations and literature reviews (Filipe et al, 2007). The study therefore investigates on the prevalence of entry barriers to three-wheeler market in an unregulated environment. It is disclosed that there are no barriers to enter the market but there exists barriers to enter a particular unionized parking place. 64% of operators responded that there are barriers to enter a particular parking place. Respondents revealed such barriers as follows;
- the operator must pay the society a compulsory fee
- the operator must obtain the membership of the society
- the influence imposed by other operators
- The operator must pay to a third person.

Among the reasons, influence from other operators is significant as per the information provided by the respondents.
4.1.5. **Competition in the Three – Wheeler Service Operation**

Competition in any market structure will influence the price to fall and thereby allocating some fraction of the total market share for each producer. However the existence of a large number of suppliers as in the case of perfect competitive markets restricts producers earning super normal profits in the long run though they earns such profits in the short run (Lipsey, 1999). Three-wheeler market characterized by contestable features however can act as a monopolist in the service provision if the service is not regulated. Nevertheless the existence of a large number of three-wheelers in a particular area may oppress the profitability of the operators. Therefore the study investigated the opinion of operators of limiting the number of vehicles of a particular area. 63% of operators are in favor of limiting the number of three-wheelers in a particular area while 37% of them are in the opinion that the number should not be restricted. Further investigation was carried out in order to capture the opinion on the high volume of imports of three – wheelers in to the country. The number of three-wheelers in operation is remarkably high as per statistics published by department of motor traffic department Sri Lanka. In 2007, 342,286 three-wheelers are recorded with valid revenue licenses while it was 290,954 for 2006(Economic and Social Statics of Sri Lanka, 2008).

In fact the growth of new registration of three-wheelers, according to the figure 8, tended to rise from 2001, but tended to fall in 2006. The rising trend of growth is primarily due to high imports of three-wheelers following bilateral agreements with India under Indo Lanka Free Trade Agreement (ILFTA).
Following this trend the study focused on the operators’ perceptions on the increasing number of three-wheelers in the country.

More interestingly 59 % of the operators are in favor of increased import volumes of three-wheelers. The given justifications in favor of high importations are as follows;

- Importation is necessary as the country is unable to produce them
- Increased numbers of three-wheelers creates competition among operators and raise the standard of service.
- Increased supply of the-wheelers in to the country will lower the price of the vehicle
- Increase mobility enhances economic activities
- Increased in job opportunities in the industry will raise incomes of low income households
- Promotion of self employment is a solution to the unemployment problem
- Low income groups are able to own a private vehicle

Nevertheless 41 % of operators are not in favor of further importation of high volumes of three-wheelers. Justifications are as follows;
- Increased volumes of imports of three-wheelers further hinders the ability of producing the vehicle in Sri Lanka
- Traffic congestion is escalated due to high number of three-wheelers
- High concentration of the vehicle in a particular area lowers the income per operator
- High number of three-wheelers will distort the fare and standards of the service.

It is evident that, due to the ILFTA, the volume of imports to Sri Lanka is remarkably on the rise and it is due to the fact that liberalization efforts on Foreign Direct investments have opened the doors to Indian market to come into the county. Bilateral Franchising agreement between the two countries enabled retail services such as Bajaj product (three-wheeler and motor bikes) to come in to Sri Lanka in large volumes (Kalegama & Mukherji, 2007). Therefore, under a climate of a bilateral trading agreement high volumes of imports of three-wheelers will be ensured and in turn it will result in further expansion of three-wheeler market.

4.1.6. Price Determination of Three – Wheeler Service

Determination of price of a commodity in the market is governed by the price mechanism in the free market, which are demand and supply forces. Nevertheless, in formal transport markets, due to the non existence of exact supply function, pricing the service is mainly done by the regulatory body. But in the case of unregulated transport market, pricing the service is determined by the operator and has the full freedom to charge over customers. Three-wheeler market falls in the latter case. Therefore the study focused on the mechanism by which the fare is decided in the market and concluding results are illustrated in figure 7. Around 43% of operators responded that the fare is independently decided by them. However there could be seen a significant influence on the fare from the societies/unions and the parking places where the operators are grouped up with.
Price of a good or a service is the signaling element to the supplier or the producer in deciding the production decision. Three-wheeler fare, charged independently by operators, therefore is researched. It is clear from the figure 8 below that there has not been a set fare for 1 kilometer travel. Nevertheless it is evident that considerable number of operators charged Rs 40 for 1 k.m. distance of travel. In fact some charges Rs 50 for the same distance. The same practice could be witnessed when the distance of travel rises. Therefore the study attempted explaining fare variations with distance.

Figure 10 : Variations in fare charged for 1 kilometer distance of travel
4.1.7. Three – Operators perspective of the Wheeler Fare Variation

Variation of the fare in the three – wheeler market is significant since the service provision has not been regulated. The following table 3 illustrates the variation of fare charged by operators. The average charged for 1 k.m. travel is Rs 42. With the increase in distance of travel the charge, on average, increases with high variations.

<table>
<thead>
<tr>
<th>Distance</th>
<th>1 k.m.</th>
<th>2 k.m.</th>
<th>3 k.m.</th>
<th>5 k.m.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum fare</td>
<td>29.85</td>
<td>50.73</td>
<td>61.46</td>
<td>87.54</td>
</tr>
<tr>
<td>Average fare</td>
<td>42.71</td>
<td>66.03</td>
<td>94.76</td>
<td>158.24</td>
</tr>
<tr>
<td>Maximum fare</td>
<td>55.57</td>
<td>81.32</td>
<td>128.06</td>
<td>228.93</td>
</tr>
</tbody>
</table>

Table 3

The distance traveled and the fare variations are clearly shown by the following figure 11 below.

Figure 11 : Variations in three-wheeler fare with distance
It is evident from the figure 8 that the fare variations are less for short distance travel while the same tends to high for long distance travel. The reason for fare variation with distance can be justified. Variation in fare for short distance is less as the commuters often use three – wheeler service for short distances and they are fully aware of the fare charged by the operators. Hence the commuters are in a position to bargain over the fare. Nevertheless, with rise in distance, the commuters are unclear about the fare and the fare is primarily determined by the operator. Under the circumstance, the operator exercises monopoly pricing practice over commuters such as fare discrimination. Discriminatory pricing strategy is reflected by high variations in the fare charged as travel distance rises.

Overall it is seen that there is no unique price for the service provided by three-wheelers and operators charge passengers at discriminately. Following the high variations in the fare charged for the service the research investigated on the circumstances under which fares are raised.

The fare decision on the fare is primarily taken by the operator as per above statistics, there is high chance of raising the fare at instances. Accordingly 42% of operators responded that they raise fare depending on particular circumstances. Most such occasions are depicted in the following figure 12.

![Figure 12: The circumstances under which three-wheeler fare is raised](image)

**Figure 12 : The circumstances under which three-wheeler fare is raised**
Transport demand involves a particular origin and a destination. A passenger is charged according to the distance between the origin and the destination. However three-wheeler market shows discriminative pricing practices by three-wheeler operators. Moreover it seems that the normal fare is raised in some circumstances. It turned out from the study that 57% of three-wheeler operators raise fare when the journey takes more stopping times while traveling. Most of the passengers get their daily work done while traveling thereby making more waiting times for the operator. In economic terms travel time for both parties, passenger and the operator, is high. Hence, raising fare by the three-wheeler operator in such case can be justified as the generalized cost of travel rises due to increased waiting time.

Apart from the case of higher travel time, changing the traveling conditions has impacted the three-wheeler operators to raise fare. It is found that 15% of the respondents raise fares during night time travel while 11% responded that raises fare when it is raining.

4.1.8. Revenue of Three – Wheeler Service

Total revenue of any producer is important considering a sustained operation of the production process. The study revealed that the daily income of a three-wheeler operator is on the average, is Rs 750. This is further researched for those operators liable to give a portion of income to the owners of the vehicle. It turned out that Rs 298 is required to pay for the owner of the three-wheeler at the end of the day. More statistics are sown in the table 4 below.

<table>
<thead>
<tr>
<th>Item</th>
<th>Rs. Earning/ Expense</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily Average Earning per driver</td>
<td>750.00</td>
</tr>
<tr>
<td>Monthly Average Earning per driver</td>
<td>22508.00</td>
</tr>
<tr>
<td>Daily Average Expenses per driver</td>
<td>613.50</td>
</tr>
<tr>
<td>Monthly Average Expenses per driver</td>
<td>18406.00</td>
</tr>
<tr>
<td>Monthly Profit per driver</td>
<td>4102.00</td>
</tr>
</tbody>
</table>

Table 4 : Average Revenue, Expenditure and Profit of an operator
The table summarizes the amount of earnings and expenses, on average, of three-wheeler operators. It is evident from the statistics that there has been a substantial amount of profit at the end of the month, on average, for a three-wheeler operator. Further the total revenue and cost data plotted in the figure 13 below show that total revenue is above total cost. The long term operation of three-wheeler is therefore sustained, even under rising fuel prices.

More over the analysis is further extended to see the impact of fuel prices on the total cost of three-wheeler operation as total cost component of any production activity along with total revenue explains the profit remaining with the producer. As far as total cost is concerned 51% of their income spent on fuel, which is a major component of the operating cost of a three-wheeler. Other than fuel, service expenses, leasing payment and membership fee are the cost components of the cost structure.
Thus it is important to formulate a price equation for three-wheeler service incorporating a variable for rising fuel prices which prevents the operators charging excessive fares on commuters.

The study researched on the operation of three-wheelers at night time to examine whether the fare is subjected to any change. Since regulated public transport operates scheduled services, night time operation is underprovided. This provides three-wheeler services to charge a higher fare relative to day time operation. Most of the three-wheeler operators responded that they do operate at night time. It is evident from the data on time of services that 74% of operators serve during night hours. However 67% of the operators responded that they are not raising the fare at night time while 33% of the respondents agreed that they raise fares during after hour operations. Fare raise is however based on several reasons. As revealed by operators, the main reasons for raising fare based on the type of passengers, the purpose of the passenger and the perceived risk of the journey.
4.1.9. The Possibility of Regulating Three-Wheeler Services

Transport operation requires the vehicle to be registered at a particular body and the vehicle needed to be insured under an accepted insurance provider. Further the operator is required to have a valid license to operate the vehicle. Since three-wheeler operation is unregulated the operators’ driving license has been given a less concern by investigating bodies at the inception of three-wheeler operation and even at present considerable number of operators do not possess a driving license. The study investigated on the availability of valid driving licenses among the selected operators. The study revealed that 86% of operators have a valid driving license but interestingly 36% of them were not holding licenses when they began their career. In fact, considerable numbers of operators have started their career without a driving license from the conclusion reached taking in to account the year of the issue of the license and the years of service of each operators. Figure 12 illustrates the number of years each operator engaged in the service provision without a license when they start their career as an operator.

The failure to detect the availability of driving licenses is reflected by 14% of three-wheeler operators who had no driving licenses even at the time of survey is undertaken. However 100% of operators revealed that the insurance cover of the vehicle is valid.

Figure 15: Number of years Three-Wheeler Operators engaged in the Service without a license
The study researched on the perceived outcome of future regulation of the operation of three-wheelers. The study findings made the conclusion expressed in the paper (Filipe N. et al 2006) unconvincing that the informal transport operators will oppose the integration measures on three-wheeler operation due to loss of profitability and extra financial burden imposed on them due to regulation.

According to the survey findings about 74% of operators believe that regulation on operation by registration of the vehicle in a provincial body and issuing a certified identification to the operator will raise the trust of passengers. But 26% of respondents oppose the statement with supportive reasoning. Most of the respondents are in the opinion that, in one hand, the commuters may not be aware of such an identity when they hire and on the other hand it imposes a burden to the operator in terms of personal security.

Further 69% of operators agree on the statement that exhibiting the fare list on the three-wheeler as a regulatory measure on pricing the service and believe that it will attract passengers. But 31% of respondents opposed the suggestion as shown in the figure 16.

![Figure 16: Opinion of Three-Wheeler operators on displaying a fare list based on distance.](image)

More formally, installation of a meter indicating fare and distance is opposed only by 28% of respondents while 72% of operators agreed upon the suggestion. Therefore it is clear that the operators prefer both cases, installing a meter in the vehicle and a fare list showing on the vehicle.
Formulating an integrated regulatory frame work for thee-wheeler service therefore is supported by the findings on the operators’ perceptions on regulatory measures, especially on fare charged for the service.

4.2. Feature on the Demand Side of Three-Wheeler Market Operation

In this section the attention is paid to the passengers’ perspective on the operation of three-wheeler service. Particularly passenger choice and preferences and fares of the service and expenditure on the service have been given more focus and analyses fare information given by operators in relation to the passenger fare information.

4.2.1. Consumer Choice and Preferences on Three-Wheeler services

Consumer choice, preferences are crucial elements in demanding a particular commodity among many alternatives. In the transport market choices available to consumers over several destinations are limited. Therefore the study focused on consumer preferences to the particular mode, three-wheelers and investigates on consumers preferences on the appearance of the driver and the vehicle at the time of hiring a three-wheeler. 76 % of
commuters revealed that they consider the appearance of the driver and 46 % are concerned about the appearance of the three-wheeler. Thus the perception of passengers on the appearance of the operator is highly significant but the appearance of the three-wheeler is of less concerned when hiring decisions are made.

4.2.2. Consumer Expenditure on Three-Wheeler Travel

It is interesting to observe that on average Rs 1333 is disposed on hiring three-wheelers. When it is compared, the ownership of a private vehicle, 52% of passengers who owns a private vehicle still hire three-wheelers for their trips. Research findings on expenditure increased by passengers on three-wheeler service are summarized in the table 5 below.

<table>
<thead>
<tr>
<th>Expenditure (Rs)</th>
<th>Passenger Count(No)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1000</td>
<td>60</td>
<td>67%</td>
</tr>
<tr>
<td>1001-2000</td>
<td>21</td>
<td>23%</td>
</tr>
<tr>
<td>2001-3000</td>
<td>11</td>
<td>12%</td>
</tr>
<tr>
<td>3001-4000</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td>4001-5000</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>5001&gt;</td>
<td>2</td>
<td>2%</td>
</tr>
</tbody>
</table>

Table 5: Distribution of passenger expenditure on three-wheeler service

The statistics emphasizes that 67% of passengers interviewed dispose less than Rs 1000 monthly for three-wheeler services. It reveals that most passengers are not regular customers of the service and the deficiencies of the conventional public transport are met by three-wheeler service. Moreover low expenditure statistics show that passengers are more likely to use three-wheeler service for short distance travel, in most cases for about 1k.m. travel.
4.2.3. Fare Variations – Passengers Perspective

Analyzing the transport market reveals a significant consumer behavior in transport market over other consumers in the general commodity market. Since transport is a discrete commodity the passenger has to purchase the service with the service provider paying the required fare. In case of three-wheeler operation as an informal public transport where the service is not regulated, passenger behavior is investigated. The study found different ways that passengers demand the service. About 22% of passengers responded that they hire the service by making a phone call to the operator to pick at a particular location. Only about 8% of passengers hire the service on a mutual contract with the operator having agreed on a particular location and time to pick the passenger and 27% of passengers gets the service simply by hiring the vehicle moving or parked at a location.

The research further investigated the fare paid by the passengers included in the sample in order to justify the fare variation revealed from the information provided by operators and to detect any correlation between fare charged and fare paid for the three-wheeler service.

The following figure 18 shows fare variations obtained from the fare information given by passengers.
The above fare variations reveal a correlation between the fare charged by the operators and the fare paid by the commuters. The correlation is precise for maximum fares charged by operators and average fare paid by commuters for the first and second kilometers. It is depicted in the figure 19. The average fare paid by the commuter is Rs. 52 for 1 k.m and Rs. 81 for 2 k.m. It is equivalent to the maximum price charged by the operators, Rs. 55 and Rs. 81 for 1 k.m. and 2 k.m. travel respectively, as per the conclusion made from the fare information given by operators. On that ground, the interesting fare practice of the service operators is revealed. That is, the operators charge commuters a maximum fare that they can impose and commuters, on average, pay the fare for 1 k.m and 2 k.m. Nevertheless, according to the figure 19, the practice of imposing maximum fare seems imprecise with rise in the distance over 2 k.m.
The price of a good or a service is the most important component equally for the producer and consumer. As far as consumers, in our case passengers, are concerned the fare for three-wheelers is surveyed. It is found that 21% respondents are not satisfied with the fare charged by the operators. Nevertheless most of the passengers, about 75% of passengers are moderately satisfied with the fare charged by the three-wheeler operators.

Nonetheless the study intended to find out underlying basis reasons on which commuters are dissatisfied about the fare and assumed that dissatisfaction may be resulted due to the travel behavior of passengers. To support the assumption, the study reveals a significant cause on the dissatisfaction on fare that the way passengers demand the service provides an opportunity for the service provider to exercise monopoly power on pricing. Rational passengers will inquire the fare before getting the service enabling them to bargain on fare and not allowing the operators to charge them heavily once the destination is reached. 66% of passengers interviewed responded that they inquire fares before the journey but the rest, 34% inquire the fare after the journey. Therefore it is clear that those who inquire the fare after the journey seems dissatisfied with the fare charged by the operator. Moreover it provides a reasonable ground to believe that operators charged those commuters relatively a higher fare.
The study by Vuchic (2005) concluded that emergence and existence of informal services are encouraged by several factors, among them existence of low fare of informal services is critical. Nevertheless his conclusion is therefore insubstantial in terms of three-wheeler operation in Sri Lanka as the fare is deemed to be relatively expensive to commuters. Similarly, as in the general commodity market, unregulated transport market provides passengers to bargain on the fare unlike in the case of regulated transport modes. But 55% of respondents revealed that they are not willing to bargain for the fare. The reasons revealed provide sufficient information to believe that the service is an integral part of the commuters’ mobility needs. The reasons for not bargaining on fare are;

- It is the mode readily available for emergency situations
- The service is often taken from usual and known operators
- The attitude and the behavior of the operator prevent the commuter from bargaining
- The commuters try to protect their respect
- The belief that the fare will not be reduced due to the resistance of operators

The investigation on the fare further paved the study to find out the prevalence of any discrepancy between day time fare and night time fare. About 42% respondents revealed that there is a different between fares charged at night time which is high but 55% of passengers answered that there is no fare discrimination at night time.
4.2.4. Availability of an Alternative to Three-Wheeler Service

Three-wheelers are widely used and are a popular transport mode by passengers other than public transport modes such as bus and rail. However the study focused on the reason as to why passengers move away from other modes such as taxi cabs which act as substitutes to three-wheelers. The perceived belief of the passengers was therefore investigated for the study purpose. 44% of respondents of the sample answered that they do not opt for taxi cabs due to high expenditure resulting from higher fares of taxi cabs and 25% of commuters revealed that the reason not to opt for taxi cab is its none availability when it is needed. Apart from that another 14% of commuters accepted the above both reasons. In line with the above disagreements of commuters to opt for taxi cabs as alternative transport mode for three-wheelers, the study came to a conclusion from the passengers’ point of view that taxi cabs yet are not a close substitute for three-wheeler services.
5. Summary and Conclusion

TW drivers can be considered as entrepreneurs in the informal economic sector. They are part and parcel component of the society creating employment opportunities while providing transport services. In this industry TW drivers face many issues that are embedded. Dealing with social stigma, social exclusions, government enforcements are some of the challengers that they face in day to day dealings. Further, by and large the TW imports have threatened their income where when the number of TW in operation increase equals to less hires they receive. For many TW drivers who participated in the survey job satisfaction and income levels positively correlates. Problems that they face on the job are mainly due to the stereotypes that the general public has. However, they feel that it is an overgeneralization of the rest of the good TW drivers in operation. From research findings it can be understood that owning a TW indicates an achieved status, this can be further comprehended with the analysis of job aspirations such as TW drivers’ determination to own a TW.

From the structural differentiation perspective (a modernized process, a complicated structure that performs multiple functions is divided into many specialized structures that perform just one function each) TW market plays the role of newly formed structure that traditional or conventional transport modes have failed. According to the Smelser, these newly formed structures often face the problem of integration. At present, TW industry fulfills the gaps in the existing public transport sector. Yet the government agencies are unable to control or coordinate with this industry at times where it needs to be controlled, especially at times like increase in oil price and hire charges.

Smelser further argues that these newly differentiated structures have issues of value conflict (a new structure may have a set of values that are different from and in conflict with those of the old structure). When considering the vision of public and private transport services, public transport would want to provide services that are economically sound for the public. In contrary the private transport services would want to maximize profit. This conflict of interest display in TW market as well. For the TW drivers it is a mode of living while for the public transport sector it an essential service that a government should provide. In reality, coordination of these two structures is
needed since at the end of the day it is commuters who rely on either of these service providers for a reasonable price. According to Smleser, he predicts that as a result of this disintegration and value conflict social disturbances could result. But in Sri Lanka, it is very unlikely that commuters have any say to the high fare charges of the TWs for the reason that TW are not regulated can not be sued for such acts. Smelser’s perspective sheds light on the problems of integration and value conflict in newly formed structurally differentiated TW market. Careful coordination and integration is needed to break the monopoly that TW has over the customer.

In this paper efforts are made to identify salient Socio economics features of the three-wheeler market as an unregulated public transport mode, based on a sample survey undertaken covering 200 three-wheeler operators and 100 three-wheeler passengers. It is found from the analysis that the service of three-wheeler provides an employment prospectus for youth who are unemployed and willing to leave the market unless they are opened for a good employment opportunity. Therefore operators own the vehicle and operate themselves.

Moreover the operation of three-wheeler service is cartelized and there exists barriers for entry in to a particular parking slot. However cartelization is more informal and it is not seen there is much impact on the fare charged on the service. The fare charged for the service is basically decided by the operator but the society under which they operate has a considerable intervention.

Therefore Fare variations are thoroughly considered and analyzed in terms of operators and passengers perspective on fare. It is found that fare variations are minimal for short distance travel while the variation rises with distance. Based on Fare information given by passengers, the analysis concluded that the operators charged the maximum fare for the service which in turn is the average fare of passengers. Moreover the study revealed the occasions in which the fare is relatively raised by operators and concluded that the operators receive substantial revenues from the service, though fuel cost is very significant in the cost structure of the operation, indicating a sustained future service. Thus three-wheeler operation in the country reflects monopoly pricing practices, with considerable price discrimination.
The conclusion drawn from the analysis on the future integration of three-wheeler provision reveals that future regulation is possible in terms of pricing the service and identifying the service as a legal transport mode. Therefore, the success of regulatory measures on the three-wheeler market in future can be vindicated.
References


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Appendixes

Questionnaire Socio-economic Aspects of Three-wheeler Market
For Three-wheeler Operators

Demographics

01. Your age

Marital status

□ Married - 0    Unmarried - 1

02. Educational level

□ G.C O/L Passed - 0    Up to G.C O/L - 1
□ G.C A/L Passed - 2    Up to G.C A/L - 3
□ 8/9/10 passed - 4    Other - 5

03. Are you engaged in this job as part time or full time employment?

Part time - 1    Full time - 2

If part time, what is the full time job?............................

If full time, how long you have been in this job?

□ □ Years    Months

04. Have you engaged in another job before?

Yes - 1    No - 2

If yes, what is it?..........................................

05. What are the reason for opting this job?

□ □ This is much easier job - 1
□ □ Receive good income - 2
□ □ Freedom in the job - 3

If any other reason, please state…………………………………………………………………………

06. How many three-wheelers are parked here?

□ □ Registered
□ □ Unregistered

07. Is importation of three-wheelers good or bad?

□ □ Good-1    Bad -2

State the reason for:…………………………………………………………………………

Socio - Economic Information

08. Is this three-wheeler owned by you?

□ □ Yes - 1    No - 2
09. How did you purchase the Three-Wheeler?
   On cash - 1
   On a lease - 2
   On a loan - 3

10. How did you decide the fare of the travel?
   Driver decides - 1
   The society decides - 2
   Decides after discussing with passenger- 3

11. Have you raised the fare in certain occasions?
   Yes - 1
   No - 2
   on what occasions?
   Night time - 1
   Rainy time -2
   When no three-wheeler available - 3
   If stopping times are high in a journey - 4

   If any other reason, state ………………………………………………………………………

12. What is your daily income?.........................

13. If you are not the owner of the vehicle, How much do you pay the owner?
   Rs. Daily
   Rs. Monthly

14. How much you spend on maintaining the three-wheeler?

<table>
<thead>
<tr>
<th>Item</th>
<th>Daily</th>
<th>Monthly</th>
<th>Anually</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel expense</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service expense</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leasing/ loan premium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other expenses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>membership fee</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subsistence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parking fee</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

15. What is your the time duration of the service?

<table>
<thead>
<tr>
<th>Column1</th>
<th>Week days</th>
<th>Weekends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Starting time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finishing time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No of shifts</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
16. What type of passengers hire Three-Wheelers at night? 

- Drunken people
- Prostitutes
- Drug traffickers

State if different from above

17. Do you agree on the confess that three-wheelers engaged in the above?

- Yes
- No

18. What is the fare you charged?

- 1 K.m
- 2 K.m
- 3 K.m
- 5 K.m

19. Do you rent out your vehicle at night time?

- Yes - 1
- No - 2

If yes, what is the rent for 1 K.m?

Rs.

20. Do you raise fare at night time?

- Yes - 1
- No - 2

21. Do you use your Three Wheeler for family trip purposes?

- Yes - 1
- No - 2

22. Why did you choose this job?

- It is difficult to find another job - 1
- Like to be self employed- 2
- Job is easy - 3
- Income is good - 4

23. Are you satisfied with the job?

- Yes -1
- No - 2

24. How do you spend time when you are at the parking place?

- Read news papers - 1
- Listening to music - 2
- Chatting with fellow drivers - 3
- Smoking/ taking liquor - 4
- Visit home - 5

State anything different from above

25. Do you follow a strategy to attract passengers?

- Yes- 1
- No -2

If not, state the reason

26. Are there any occupational issues?

- ...............................
27. When did you obtain your driving license?  
   Have applied for a one  
   Yet to apply  
   Not applied  

28. Is the vehicle registered under your name?  
   Yes -1  
   No -2  

29. Is the vehicle insurance valid?  
   Yes -1  
   No -2  

30. Do you think the passengers' trust on you will increase by posting your photograph and a certificate authenticated by police or any other responsible authority, on your Three-wheeler?  
   Yes- 1  
   No - 2  

If not, why?.................................

31. Do you think by posting fare charges on your Three-wheeler will attract the number of passengers ?  
   Yes -1  
   No -2  

If not, why?.................................

32. Do you think installing a meter showing fare and distance will increase daily passengers?  
   Yes -1  
   No - 2  

If not, why?.................................

33. What type of passengers you have?  
   Daily users - 1  
   Weekly users -2  
   Irregular users - 3  

34. Do you give your telephone/ mobile phone number to passengers?  
   Yes-1  
   No -2  

If not, why?.................................

35. Do you find any barriers when you enter in to a particular parking place first time?  
   Yes 1  
   No -2  

36. If there are barriers, what are they?  
   Payment to the society/union a permanent fee -1  
   Compulsory membership of the society/union - 2  
   Enforcement from other operators -3  
   Payment to a third person -4  

State any other reason different to above……………………………………………….

37. Do you think three-wheelers must be registered with a provincial authority?  
   Yes -1  
   No -2  

38. Do you think number of three-wheelers operating in a particular area must be limited to a number?  
   Yes -1  
   No -2  

39. How long you will be engaging in this job?..............................................
40. What are your career aspirations?..................................................

41. Do you earn a certain status in the society by owning a three-wheeler?  

   Yes -1      No -2

   If yes,  
   ________  have social acceptance
   ________  have social status (lower/middle/upper class)
Questionnaire to obtain Socio-economic data of Three-wheeler Passengers

Age:…………….      Gender:…………………..
Occupation: White color - 1
Non - white color - 2
Self employment - 3
Unemployed/housemaid - 4
Student - 5

01. Do you use three-wheelers for your travel needs?   Yes - 1      No -2
          Often
          Few times a week
          Rarely

If no, why don’t you use?  
          Crimes/drug dealing/prostitution take place due to three-wheelers - 1
          It is expensive - 2
          It is an unsafe vehicle/ driving behavior - 3
          Unable to find it when needed - 4

02. How much you spent on three-wheelers monthly? Rs.

03. Do you own a private vehicle?   Yes -1    No - 2

04. How do you mostly contact or hire a three-wheeler?  
          By telephone - 1
          On an agreement to pick daily - 2
          Hiring a vehicle randomly - 3
          Hiring a vehicle at a parking place - 4

05. Are you satisfied with the fare charged by the operators? 
          Do not satisfied - 1
          Fairly satisfied - 2
          Satisfied - 3
          Fully satisfied - 4

If not satisfied, what are the reasons?..........................................................

06. When do you inquire the fare before/after the ride?  
          Always - 1
          Some time - 2
          No – 3

07. If you feel the fare charged is very high, do you bargain? 
          Yes -1    No - 2
Why don’t you bargain?...............................

08. When you hire a three-wheeler, do you concern about the appearance of the driver?

   Yes - 1  No - 2  Some time - 3

   Do you concern about the appearance of the vehicle?

   Yes - 1  No - 2  some time -3

09. Do you use three-wheelers for night travel?  
   Yes - 1  No - 2  some time -3

10. Do you find a difference between fares at night and fares at day time?  
     Yes - 1  No - 2  Some time - 3

11. Do you inquire about the fare before you get into the vehicle?

     Yes - 1  No - 2  Some time - 3

12. Are you satisfied with the three-wheeler operation as a passenger?  

   Yes - 1  No – 2

   If no, state the reason

   Speedy driving habit
   driving breaking road rules
   no standard fares
   not good for the social status
   other

13. How much you pay for the ride?

   1 K.m  2 K.m  3 K.m  5 K.m

14. What is your opinion on three-wheeler drivers following road rules?

   Always - 1
   Some time - 2
   No - 3

15. Have you ever insisted three-wheeler driver to take you to the destination fast?

   yes - 1  No - 2

16. Why do not you use motor taxi cabs instead of three-wheelers?

   Expensive - 1
   No safety - 2
   unavailability when needed - 3
   No contacts available - 4

17. On what trip purposes you hire three-wheelers mostly?
18. What is your opinion on operating three-wheelers on main roads?
   Good - 1
   If bad, what are the solutions that can be applied?
   Ban on operation
   limiting operation on main roads
   must allocate a lane for three-wheelers
   Other………………………………………………………………………………

19. What is the social class of Three wheeler users?……………………………………