

# STUDY ON UPGRADING THE LIVELIHOOD STRATEGIES OF THREE WHEELER DRIVERS IN SRI LANKA



National Human  
Resources Development  
Council of Sri Lanka

**Study on Upgrading Livelihood Strategies of Three-wheeler  
Drivers in Sri Lanka**

**National Human Resources Development Council of Sri Lanka**  
**Ministry of National Policies and Economic Affairs**

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**Dr K.A. Lalithadheera**

**Director**

**National Human Resources Development Council of Sri Lanka**

## Abbreviation

DCS: Department of Census and Statistics

DoM: Department of Motor Traffic

DS: Divisional Secretariats

GCE A/L: General Certificate of Examination in Advanced Level

GCE O/L: General Certificate of Examination in Ordinary Level

ICT: Information and Communication Technology

LifeTW : Lifetime Three-wheeler Drivers, who are willing to engage in Three Wheeler driving throughout their Lifetime

MLIT: Ministry of Land Infrastructure and Transport

MSD: Musculoskeletal Disorder

NHRDC: National Human Resources Development Council

OPL: Official Poverty Line

Trans TW: Transitional Three-wheeler Drivers, who are willing to transit from Three Wheeler driving to another Occupation

TVET: Technical and Vocational Education and Training

TW: Three Wheeler

UK: United Kingdom

USA: United State of America

WHO: World Health organization

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## Executive Summary

Three-wheelers are a vital means for low-cost transportation in Sri Lanka. It serves as a taxi but also serves as a family vehicle. Further, it is used even more in rural areas where there is no public transport or other taxi services. In the cities where there is heavy traffic the TW is able to veer itself and be faster than other vehicles.

The TW becomes a means of earning for its owner through travel charges. A cost of a TW in 2019 is around LKR.800, 000.00. Thus it becomes the cheapest vehicle on the roads barring the motorcycle. This vehicle is owned mostly by persons of lower income. Yet they do not have the complete sum of money to buy the TW outright. Therefore, they enter into contracts with leasing companies who also earn through the lease of the vehicles.

There are roughly 1.059 million three-wheelers registered with the RMV of which about 200,000 are not used for hiring. The remaining 800,000 are driven by 9.8% of our employed population which is 8.2 million. According to our survey we discovered that most of the TW drivers are able bodied young people who can be gainfully employed in more productive work helping the economy. We also found that almost all TWs are driven by males.

This study provides policymakers and practitioners the background, rationale and directions to address the issue of shortage of labour as against the ease of the employable youth to enter the TW market. The survey identified the demographic socioeconomic characteristics associated with the TW drivers' occupation. An understanding of these characteristics will help to draw them away from driving into a required productive work. This may help to understand the sector and identify viable alternatives to redeploy them. Further, the possibility of taking them out from TW driving were investigated in order to provide vital information to prioritize and to target policies. Moreover, we examined the best practices in the driving occupation both here and in other countries and they will shed light to establish the appropriate regulating body and the regulations to mitigate the negative externalities of the industry.

## **OVERVIEW OF THE INDUSTRY**

Apart from motorcycles, the three-wheeler is the most common type of vehicle and the most popular mode of transport. The country is one of the biggest markets for TWs (The Economist, 2014). It has been pointed out that the number of three-wheelers doubled between 2005 and 2010 (DoM Traffic. 2011). The number of registered three-wheelers in Sri Lanka was 766,784 in 2012, which is 15.7% of the total vehicle population (DoM Traffic. 2015). From 2004 to 2012, the number of registered three wheelers in Sri Lanka increased by 260% and the total number of registered TWs for the year 2015 was 129,547. By the end of 2016, there were 1,062,447 registered three-wheelers and this figure in November 2017 was 937,126 which is comparatively high when compared to the numbers of cars (434233), dual-purpose vehicles (340703) and buses (51533) (DoM Traffic, 2017). From 2010 to 2016, the share of TW owned households in the country increased from 6.5% to 14.1% (DCS, 2018a). The growth of the number of TW owned households is recorded as 188% which is much greater than the growth of car owned households (55%) and bus/lorry owned households (40%) (DCS, 2013, 2018).

There is a clear variation in the number of registered TWs in each province. The highest number of three-wheelers by the end of 2016 was registered in the Western Province (352,540) which was one-third of the total, followed by 140,823 in the Southern Province and 135,791 in the Central Province. The least number of three-wheeled vehicles registered (1,331) was recorded in the Eastern Province. Once the share of TW owned households were taken, as shown in Figure 1, estate sector records a dramatic growth (from 2.3 in 2010 to 9.1 in 2016) with more than 295% increase. This increase is 110% and 118% for rural and urban sectors respectively (DCS, 2013; 2018a)

## **RESEARCH PROBLEM**

Sri Lanka faces an acute shortage of labor at skilled and semi-skilled levels. There are multifarious jobs in the construction, manufacturing, tourism & hospitality sectors creating employment opportunities for a lot of young energetic people. At the same time, many young people are under-employed as three-wheeler drivers and their value addition to the economy is very low.

In addition one of the perceptions of the community is that the TW occupation creates a tendency for the youth to get addicted to a life of drugs and crime. Hence, there is an urgent need to find strategies to move the productive spirit of the country into better paying, low-stressed productive jobs which ultimately lessen the acute manpower shortages in booming sectors in the country.

## **STUDY OBJECTIVES**

The objective of this study is to outline a workable strategy to upgrade the skills of the youth who are engaged in driving three-wheelers and move them into well-paying low-stressed productive jobs. This will eventually find the way forward to fill the acute manpower gaps in the industry and also strengthen the talent pipeline in the manufacturing, construction, tourism and services sectors.

## **METHODOLOGY**

The study mainly used applied research methodology. Based on the existing information and the discussion forum the study assumed that the population of the study is around 800,000 and out of this population the study selected a sample of 1500 using a simple random sampling method. Mainly the data was collected through a questionnaire survey (1200 questionnaires received) and after the data cleaning process 1073 remained. As most of the variables are categorical, categorical data analysis techniques have been used in analyzing the study.

Apart from the questionnaires the study collected data through conducting structured interviews with the members of three-wheeler Associations, government officials and other parties, observation at three-wheeler parks and using secondary data sources.

## **OVERVIEW OF THE FINDINGS**

It was revealed that approximately 16 percent of the TW drivers are below 30 years of age and more than one-third of them are below 35 years. Their education background showed that the majority of TW drivers have completed O/L. Half of the sampled young population acquired O/L qualification, 8 percent of them had completed A/L or higher exam.

It is a preferred mode of transport and an employment source for both rural and urban communities in the country because of low cost availability, convenience, and speed in traffic jams, road maneuverability and as the most popular ambulance for the rural poor. Moreover, the study found that TWs drivers earn a considerably higher level of income compared to other self-employed. The average income is LKR 39,000 and distribution range was a minimum of LKR 4800 to maximum of LKR.140,000.

It has been well acknowledged that the TW occupation is responsible for several significant negative externalities; traffic congestion, disorderly operations, unfair practices, accidents that harm public safety and welfare. Thus, it is necessary to regulate the TW occupation so that it can deliver significant benefits for the society.

The advantages of the emergence of TWs is Flexible working hours, a chance to support the family, a good source of income, a source to make new friends and also a very effective method for networking. On the other hand, the most significant disadvantage of TW driving is the lack of social recognition for them. Lack of social acceptability, unstable income, and job security.

It was found that the majority agree with all the rules and regulations proposed by the government: minimum age, identity card, uniform, and receipt to the passenger. This implies that they would probably not oppose the policies to upgrade their lifestyle. However, it was evidenced that they are completely unaware of the need, importance and possible benefits of their implementation.

According to the findings, a little less than half of the TW drivers like to quit the job if there are viable alternatives. The majority of those who like to quit are married young males. More than 90 % of TW drivers who like to quit TW job for another occupation are O/L qualified persons. Data clearly indicates the young who have been excluded from the formal labor market due to the lack of opportunities for the lower belt, have involuntarily been pulled into the TW sector. It was also found that most of the TW drivers like to follow vocational training as part-time courses and in weekends.

## **POLICY IMPLICATIONS FOR REDEPLOYMENT**

Appropriate and timely demanded skills should be developed through participatory training with the support of service or the contribution provided by the TVET bodies. It is time to assess the productivity or employability of the courses conducted by these government bodies before pumping public money into them for any activity.

Study findings primarily show that the empowerment programs should focus on young and married people. But their education background showed that the majority have completed O/L but it is not sufficient to meet formal labor market requirements for white-collar jobs.

The frictional TWs prefer regular, stable and less risky operations. Again, this suggested that entrepreneurship may be challenging for them because they seem reluctant to bear any risk. Thus entrepreneur culture should be developed before any policy intervention.

## **POLICY IMPLICATIONS FOR REGULATING THE SECTOR**

- **Regulate the best practices**

The conflict between the practice of the regulation (i.e. meter fixing etc.) and the actual behavior implies the mismatch between implementation and effectiveness of newly imposed regulations,

Regulate the best practices (training, knowledge, awareness, age, advance driving experience etc.) which suits the given locality can be adopted as entry qualifications into the industry rather than using ‘park registration’.

- **Minimize the information gaps**

Centralized -in the form of government semi-government or private- the intermediating center can act to minimize the information gaps reducing transaction cost and also increasing consumer welfare

According to study findings, even without knowing the need, importance and possible benefits of such implementations, the majority agreed with all the rules and regulations proposed by the government. Thus it is mandatory to pass the complete information on the impact of such policies on developing TW taxi service as an accepted profession.

- **Three Wheeler services have to be regulated as a profession.**

Driver related factors may be controlled by developing TW taxi service as a profession. This can be done through introducing a NVQ level program for professional TW taxi service and making it compulsory to engage in hiring service. Moreover, TW drivers should be tracked through comprehensive (internship) and follow up training.

- **An appropriate social security network should be established**

Establish a social security network to address the welfare of the drivers and their families. Through this network the study suggests the introduction of pension scheme, health insurance scheme, loan scheme and etc.

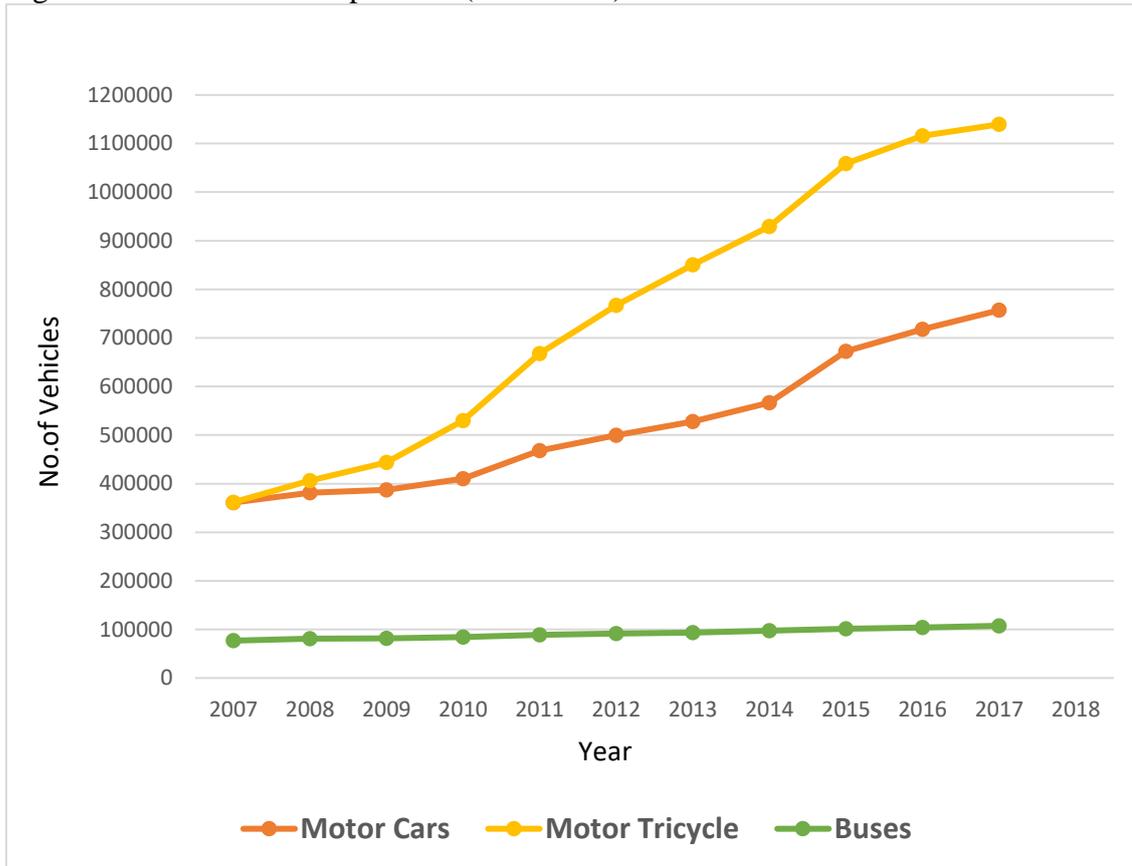
# 01 Introduction

## 1.1. Overview of Three-Wheeler Study

The informal transport sector has burgeoned throughout cities in both the developed and developing world bridging the gap of inadequate, inefficient and less effective public transport services. The urban residents who are negatively affected by the intolerable levels of traffic congestion and who are unable to afford private transport demand on the sector (Cervero, 2002). In this regard, powered two-wheelers and three-wheelers are becoming one of the main means of transporting both people and goods particularly in developing countries, and are attracting an increasingly varied user population while three wheelers (TWs) have been identified as a popular mode of public transportation in low-income to middle-income countries (World Health Organization-WHO, 2017).

Apart from motorcycles, the three-wheeler is the most common type of vehicle and the most popular mode of transport and hiring them has become a major self-employment mean in Sri Lanka. The country is one of the biggest markets for TWs (The Economist, 2014). It has been pointed that the number of three-wheelers were doubled between 2005 and 2010 (DoM Traffic. 2011). The number of registered three wheelers in Sri Lanka was 766,784 in 2012, which is 15.7% of the total vehicle population (DoM Traffic. 2015). From 2004 to 2012, the number of registered three wheelers in Sri Lanka increased by 260% and the total number of registered TWs for the year 2015 was 129,547. By the end of 2016, there were 1,062,447 registered three-wheelers while this figure in November, 2017 was 937,126 significant compared to the numbers of cars (434233), dual-purpose vehicles (340703) and buses (51533) (DoM Traffic, 2017). Figure 1: graphically shows the growth of vehicle population in Sri Lanka from 2007 to 2017. Growth in the number of three-wheelers is greater than in any other category. It has increased by 261% since 2010. The number of cars has grown 177%, motorcycles 192%, dual-purpose vehicles 187%, Lorries 121% and buses 126%, all far lower. From 2010 to 2016, the share of TW owned households in the country increased from 6.5% to 14.1% (DCS, 2018a). The growth of the number of TW owned households is recorded as 188% which is much greater than the growth of car owned households (55%) and bus/lorry owned households (40%) (DCS, 2013, 2018a).

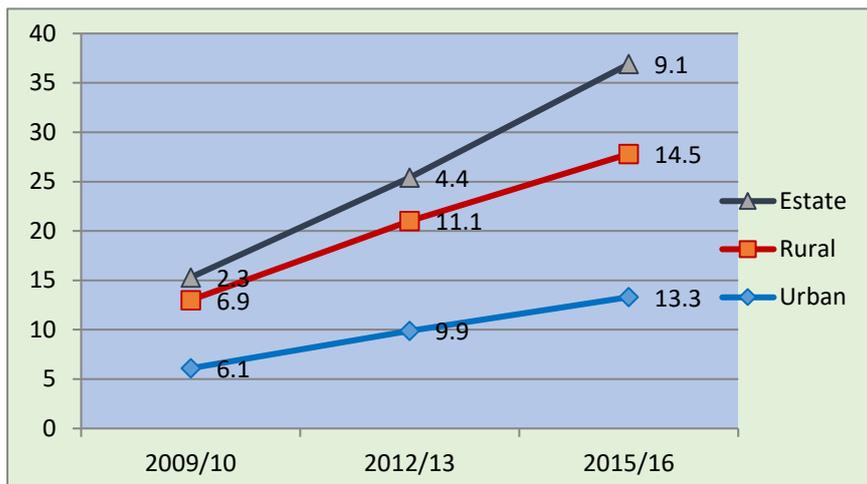
Figure 1: Total Vehicle Population (2007-2017)



Source: DoM Traffic,2017

There is a clear variation in sectoral, provincial and district layout. The highest number of three-wheelers by the end of 2016 was registered in the Western Province (352,540) which was one third of the total, followed by 140,823 in the Southern Province and 135,791 in the Central Province. The least number of three-wheelers registered (1,331) was recorded in the Eastern Province. Once the share of TW owned households were taken, as shown in Figure 2, estate sector records a dramatic growth (from 2.3 in 2010 to 9.1 in 2016) with more than 295% increase. This increase is 110% and 118% for rural and urban sectors respectively (DCS, 2013; 2018a)

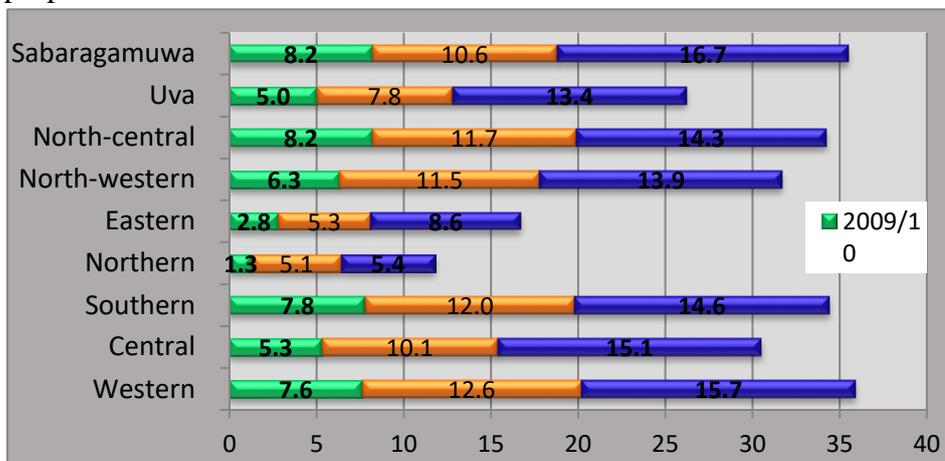
Figure 2: Share of TW owned households



Source: DCS, 2013; 2018

Figure 3 shows the provincial and district wise percentage distribution of households that own a TW for transportation purposes in 2016. Accordingly, the Sabaragamuwa province reports the highest share while the Western province has the second highest share of households owning a TW for transportation purposes. Even though Northern Province shows the highest growth over six years, it has the least share of TW owned households compared to the other provinces. Except for the Northern and Eastern provinces, the highest growth of the TW owned households is from Central and Uva Provinces. Further, the percentage increase in the Western Province is also considerable. On average, 1% to 13% of households in all the provinces (except Northern and Eastern) have their own TWs.

Figure 3 : Percentage distribution of households that own a TW for transportation purposes



Source: DCS, 2013; 2018

Approximately 14% of all households in Sri Lanka own and operate a three-wheeler as a source of income or transport. That is to say, out of 5.4 Mn total households in the country, 0.76 Mn households or approximately 2.8 Mn people mainly or partly depend on TW earnings (DCS, 2018a). Consequently, out of the 7.9 Mn employed populations, more or less 0.76 Mn people or 9.2% of the working population are estimated to be three-wheeler drivers (DCS, 2018a).

Aforesaid statistical evidence show that TWs play a major role in the public transportation of the country. It is a preferred mode of transport and an employment source for both rural and urban communities in Sri Lanka due to various reasons. Availability, convenience, mobility in traffic jams, road maneuverability may be some of the attractive reasons. Further, since the TWs are readily available and low in cost, the consent of three-wheeler drivers to transport patients as a social service have made it the most popular ambulance for the rural people and the poor. Therefore, TWs are commonly used in very remote areas of Sri Lanka.

However, the economic and social cost of the increase of TWs is said to be tremendous on several grounds. As the first and the foremost fact, it has been posited that Sri Lanka faces an acute shortage of labour at skilled and semi-skilled levels. It has been claimed that there are multifarious jobs in the construction, hospitality and tourism sectors creating employment opportunities for a lot of young energetic people. However, it has been evidenced that many of the young people are underemployed as three-wheeler drivers. Consequently, an excessive number of three wheelers have been put on Sri Lankan roads thereby confining a considerable portion of the labour market to a single trade – three wheel transport without a productive value addition to the economy (Karunanayake, 2016). Moreover, underemployment not only wastes the productive labour but also creates a tendency for the youth to get addicted to a life of drugs and crime (Silva, 2016). Further, three-wheelers contribute to an exceptionally higher number of road accidents (Amarasinghe, 2015; De Silva et al., 2001) and seen as dangerous contraptions and a menace to other road users partly due to the features of the vehicle and partly due to the offences regularly committed by the three-wheeler drivers .It was said that three-wheeler accidents totaled 6,879, causing 207 deaths, more than 10 percent of the total number of fatal accidents in 2016. Furthermore, three-wheeler drivers are known to have access to illegal substances and they contribute to social issues too.

## **1.2. Research Problem and Justification**

Scholars have recognized the need for finding strategies to move the productive spirit of the country into better paying, low-stressed productive jobs which ultimately lessen the acute manpower shortages in booming sectors of the country. However, addressing of the issue demands a decent work life for three-wheeler drivers with a better income and a reasonable alternative transport mode to fill the void of public transport. Before designing a well-balanced strategy to involve this group into productive work that aligns with their aspirations, it is vital to explore the target groups' readiness, capacity, and willingness. The present report is expected to address this contemporary need.

Followed by the introduction, section 2 provides the background for the study reviewing the relevant empirical literature. This section also presents the empirical strategy, data and the variables of the models estimated. Section 3 sets out a descriptive overview obtained from uncontrolled data setting while sub section 3.2 presents the results and discussion of the econometric model. Section 4 concludes the study by drawing policy implications.

## **1.3. Objective of the Study**

### **1.3.1. Main objective**

To outline a workable strategy to upgrade the skills of the youth who are engaged in driving three-wheelers and move them into well-paying low-stressed productive jobs.

### **1.3.2. Specific Objectives**

- To identify the socio – economic characteristics of TW community
- To identify the issues in TW community
- To study the possibility to direct TW drivers towards vocational training
- To find out suitable strategies to overcome the issues related to TW community

## **1.4. Limitation**

- ❖ Due to time and cost constraints;
  - Out of selected 9 districts from each province only 5 districts were covered.
  - Out of selected 27 DS Division only 15 DS Division were covered.

- Sample was reduced from 1655 to 1076 number of sampling units
- ❖ No systematic database on registered TW drivers

## 02 Literature Review, Data and Methods

### 2.1 Literature review

According to the scholars, TWs are an indispensable means of transportation in Sri Lanka, as they provide 24 hours door-to-door service for a large number of passengers in urbanities, suburbs as well as in very remote areas in the country. However, it does not reward a professional recognition because of the economic and social cost related to TW operations are proven to be tremendous on several grounds. Reviewing the available academic endeavors especially in the local context would help to understand whether the pluses are offset by the minuses.

#### 2.1.1 Characteristics of the Market

As Samarasinghe and Samarakkody, (1999) observe, three-wheelers are mostly used by the lower-middle and middle-class people in the Sri Lankan transport context. According to Kumarage, et al (2010), TWs are the most common, widespread and visible informal transport mode which provides least cost, easy, readily available transportation, mainly for housewives and unemployed in Sri Lanka. Further, it was revealed that the majority seeks TWs to get to work, to transport patients to the hospital at an emergency situation, to send children to school and for trip purposes.

It was revealed that the majority (39%) of the TW drivers fell into the age bracket of 29-38 years and over 90% of the TW drivers are in the active working age group. Further, it was found that majority of the drivers have started this career at the ages of 18-21 years (Kumarage et al, 2009). Somasundareswaran et al (2006) claimed that more than 25% of the TW drivers enter this job as their initial occupation until they find a better job. Further, he revealed that 14% of TW drivers are not happy with it and 9% are likely to quit in five years. As Kumarage et al., (2009) posited, 34% have chosen TW driving because it was difficult to find any other job while 33% have chosen because it is easy. Only 14% mentioned that income level of this job is good.

### 2.1.2 Issues related to TW taxi service

TWs make an important contribution to transport everywhere in the country, offering demand-responsive, door-to-door transport. However, many perceive that TWs are a nuisance which contributes to creating traffic blocks, produce noise, air pollution, an avenue that associates with illegal activities, price irregularities, a dangerous contraption, a menace to road users and create health issues.

**Traffic congestion:** TWs are considered one of the major sources that creates traffic congestions in many cities. Through his study, Weerasekera, (2009) found that provision of TW parking near road intersections lead to visibility obstruction at intersections, reduce road capacities, and bottle-necks at the approaches of the intersection, which cause inconvenience to both pedestrians and drivers affect the smooth flow of traffic (Weerasekera, 2009).

**Disorderly operations and unfair practices:** As Somasundareswaran et al (2006) revealed about 68% of TW drivers have drinking habits and 87% have smoking habits. More importantly, 66% of the drinking drivers operate their vehicle under the influence of liquor. Confirming these results, Sampath and Fonseka, (2010) found that 66% of TW drivers were alcohol users, 53.6% were smokers and 5.6% were illicit drug users. According to Kumarage (2009), TW drivers engage in smuggling drugs, and provide transport facilities to prostitutes in order to earn above the usual rate.

**Accidents and public safety:** As in Kumarage (2009), TWs were responsible for over 50% of the accidents and 51% of the traffic violations in the western province. Sampath and Fonseka (2010) found that TWs were responsible for 13% of total reported road traffic accidents in 2007 and it was almost the same for the years 2005 and 2006. Further, TWs have been identified as the third commonest vehicle to be responsible for accidents. Dharmarathne (2001) pointed that the passengers of public transport- buses and TWs are the two commonest road users to be injured in road traffic accidents.

Amarasinghe (2015) reports that there were a total of 46,435 three wheeler-involved-crashes on Sri Lankan roadways during the ten-year period from 2004-2013. He claimed that the age of a three wheeler-driver is important in understanding the characteristics of TW crashes and reveals that a majority of three wheeler drivers involved in crashes were 21-30 years of age. Further, it was indicated that the number of three wheeler crashes in

rural areas is higher than that in urban areas, higher in weekends, under clear weather conditions and with newer vehicles. According to de Silva et al (2001), compared to other vehicle accidents, fatal accidents are very high among TW crashes (also see Amarasinghe, 2015). According to Sampath and Fonseka (2010) road traffic accidents are more common among drivers who drive rented TWs, who have the habit of drinking and driving and smoking while driving. De Silva et al (2001) further confirmed that alcohol consumption was recognized as a major contributory factor, in particular for night accidents. They also found that there was a strong association between mechanical alteration of the vehicle's handle-lock and the risk of the accident (Annex II).

**Personal health risk:** There is a severe dearth of studies related to health risk of TW driving in the local setting. According to European Agency for Safety and Health at Work (2010), except the individual behavior of the drivers which is harmful to personal health, there are four most important occupational risks linked with driving: physical, chemical, biological and psychosocial risks. Physical risks could be aroused due to vibrations, manual handling of loads (by lifting, holding, putting down, pushing, pulling, carrying); risks linked with a long sitting position, including MSDs of the neck, shoulder and back, and cardiovascular diseases; risks linked with being 'on the road'. Figa-Talamanca et al (1996) concluded that prolonged urban automobile driving might be a risk factor for sperm quality, and particularly for sperm morphology and thereby fertility due to the work exposures of the taxi drivers (prolonged sitting, unfavorable microclimatic conditions, and the possible development of excessive heat, combined with mechanical vibrations, stress and polluted air). The two most important risks included in; psychosocial risks are stress and violence while smoking; consumption of stimulants, such as coffee, and alcohol; lack of physical exercise are risky individual behaviors.(European Agency for Safety and Health at Work, 2010).

All in all, research evidence significantly support the common discourse on TWs. Three wheelers as a means of public transportation not only affect the society positively but it has also generated numerous dire consequences. The central concern is that the sector's responsibility for significant negative externalities, like traffic congestion, disorderly operations, unfair practices, accidents that harm public safety and welfare. Thus, the deregulation of TW industry has the potential to deliver significant benefits for the society.

### 2.1.3 Regulation of the industry: International experience

It is well reported that the most taxi markets in the world's major cities are highly regulated when compared with other sectors of the economy (Seibert, 2006). There are generally three main aspects to this regulation: fare regulation, entry regulation and safety regulation. Fare regulation involves the government determining and mandating fare levels for taxis operating in the market. Entry regulation involves the government restricting the number of taxis operating in the market. Safety regulation involves mandating rules and standards for taxis and taxi drivers relating to matters such as vehicle maintenance, security surveillance and driver education. Whilst it is generally accepted that some form of safety regulation is necessary to protect taxi drivers and customers.

A certain form of fare regulation can be justified for taxi market due to its nature of incomplete information. When there is imperfect information and co-ordination problems, a market for information may develop (Deighton-Smith, 2000). Although many government regulatory authorities use this as a justification for the regulation of fare levels (Koehler, 2005), it may create disadvantages reducing the benefits of fare competition (Cairns and Liston-Heyes, 1996; Husock, 1999). Alternatively a centralized intermediary may provide an effective way to match customers and taxis addressing imperfect information and co-ordination problems. As Seibert, (2006) finds such an intermediary would effectively take the form of a call center which has information on the location of all taxis currently on duty in a particular city. It was suggested that centralized intermediary could be established through co-operation between industry, customers and government. It could be funded by a small levy on all taxis or customers that use the intermediary service. Further, researchers suggested the need of considering differences among taxi markets in different cities and establish the intermediary institutions or the government involvement at the lowest level (for example, municipal or regional governments) so that the arrangements can be adjusted to suit the needs of particular taxi markets (Seibert, 2006).

Most of the studies have found that deregulation of taxi markets yields significant benefits for taxi customers. In Australia, it was found that the removal of entry restrictions into the taxi market yields a benefit to customers in the form of lower fare levels (Deighton-Smith, 2000). As in Barrett, (2005) customer waiting times have decreased substantially since the removal of entry restrictions into the taxi market.

Where safety regulations are concerned, mostly the developed countries like Japan, UK, USA provide best practices. According to Ker et al, (2003), driver errors are critical in road traffic crashes. A great emphasis has been placed on road safety strategies to reduce driver errors through driver education programs. Promoting post-license driver education, enhancing the status of advanced driving qualifications, and encouraging extra training for professional drivers, are key components of the UK government's Road Safety Strategy.

The Ministry of Land Infrastructure and Transport (MLIT) is the regulatory body for Japan's taxicab industry. The MLIT promotes liberalization, hoping to increase cab usage as a result of greater competition. In Japan, it is mandatory to follow a 3-day course covering map reading and knowledge acquisition of the major routes. Training typically covers local traffic laws, driver safety, and the local street layout, operating the taximeter and communications equipment while Para transit drivers receive special training in how to handle wheelchair lifts and other mechanical devices. Currently, there are 120 patterns of exams to uplift the quality of the taxi service in Japan. Further, to provide drivers with on-the road corrective guidance, for example, safe driving hints, to optimize operations and prevent traffic accidents, a monitoring team continually run three shifts to providing 24-hour cover (Skok, and Kobayashi, 2007).

As in Skok, and Kobayashi (2007) and Tokyo Taxi Centre (2005), all Tokyo cab drivers must register at the Tokyo Taxi Centre. This center handles complaints, queries and lost property on a 24/7 basis via phone and website. Further, the Centre's contact details are printed on customer receipts. Additionally, drivers must carry a Tokyo traffic map in the cabs. In order to ensure good practice in drivers and companies 5515 awards have been made to drivers. The Centre has also introduced a system to rank taxicab companies according to the level of service provided. For example considering the number and quality of traffic violations, customer complaints and overall compliance. Finally, the Centre has a monitoring system (including customer surveys) to improve the overall quality of services.

Moreover, drivers are checked for correct attire and reminded of the importance of maintaining high levels of customer service. Most companies have detailed customer service manuals. The customer survey by Tokyo Taxi Centre shows that 80% of customers were welcomed with a polite greeting and 75% were reminded to retain their

belongings at the end of the trip. During the mandatory training at Tokyo Taxi Centre, conflict scenarios are role played, emphasizing the need to remain calm regardless of the situation.

### 3. Methodology

#### 3.1. Data

The absence of a responsible regulatory body for three wheel operations in the country created a void of data availability which ultimately results in a severe dearth of academic contributions for the sector. Hence, it was an essential requirement to conduct a field survey to collect data for this study. TWs registered were taken as the population of the study, a cross section of 1076 Three-Wheeler drivers were chosen under two phase stratified random sampling method. Thereafter the randomly chosen TW drivers who were eligible and willing to participate in selected localities were interviewed for the study. Survey interviews were conducted during March - April 2017 by NHRDC staff members. The survey team was carefully and systematically guided to control sampling biasness and a representative sample of TW drivers from the selected localities was considered. The main survey instrument used to gather data was an interviewer administered questionnaire, which included 10 sections. The four sections of the questionnaire were designed to obtain information; *Section-A* Personal Information ;*Section-B* Type and ownership of the vehicle ;*Section-C* hiring information; *Section-D* Information on Operation, Maintenance and Income; *Section-E* Overall information of the hiring of the three-wheeler source; *Section-F* Problems related three-wheeler; *Section-G* The information on uplift as a professional job ; *Section-H* Job Aspiration; *Section-I* Alcohol Usage; *Section-J* The willingness of engaging with the vocational training opportunities.(Annex. 1) Secondary data for the study were collected through published sources: Central Bank reports(2016), Department of Census and Statistics Reports (2018a), Vehicle registration statistics and Urban Transport Study Reports.

#### **Sampling Method**

In this study two phase stratified sampling method was used to select sampling units. According to the data of Department of Motor Traffic, ICT Division total number of registered three-wheelers up to end of year 2016 was 1,050,258. This number will be the population of this survey. Using the Morgan's table minimum size of sample has been

determined by considering 5% of Margin of Error and 95 % Confidence level. Therefore sample size was **1534**. After that two phase stratified sampling was applied as follows,

- Phase one strata (Primary strata units) – According to district  
9 district (Strata) were selected based on highest number of three-wheels registered for each province. (Number of primary strata units ( $n_i$ )). Sample size were divided into each selected district based on the ratio that has been constructed using number of registered three-wheels in selected districts.
- Phase two strata (Secondary Strata units) – According to population density (Urban, Semi Urban and Rural)  
Out of 9 primary strata units, three Divisional secretariats (Secondary Strata units ( $m_i$ )) were selected based on Highest, Average and Lowest population density in each selected district respectively { 27 DS divisions ( $N = n_i * m_i$  )} Each sub sample sizes were divided in to selected DS divisions (Secondary strata units) in each selected district based on 3:2:1 ratio. After that all secondary strata units contain number of sampling units below 30 were adjusted to 30 units. Therefore final sample size increased to **1655** units.
- Finally, simple random sampling procedure has been applied to select final sampling units inside each secondary strata units.

### Assumption

- In DS divisions sub sample sizes were divided based on 3:2:1 ratio assuming, Three - wheeler population follows 3:2:1 ratio in Urban, Semi Urban and Rural areas respectively.

Figure 4: Project in brief

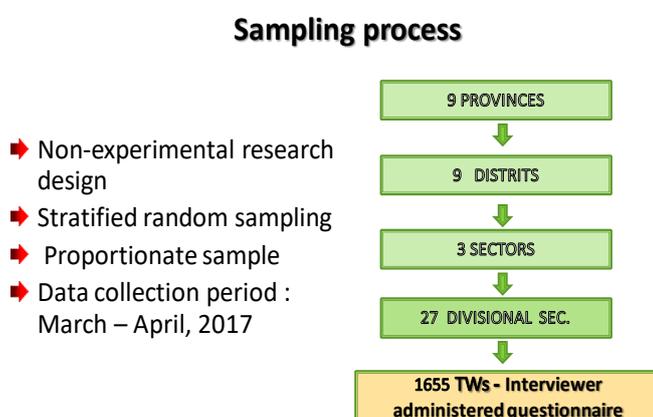
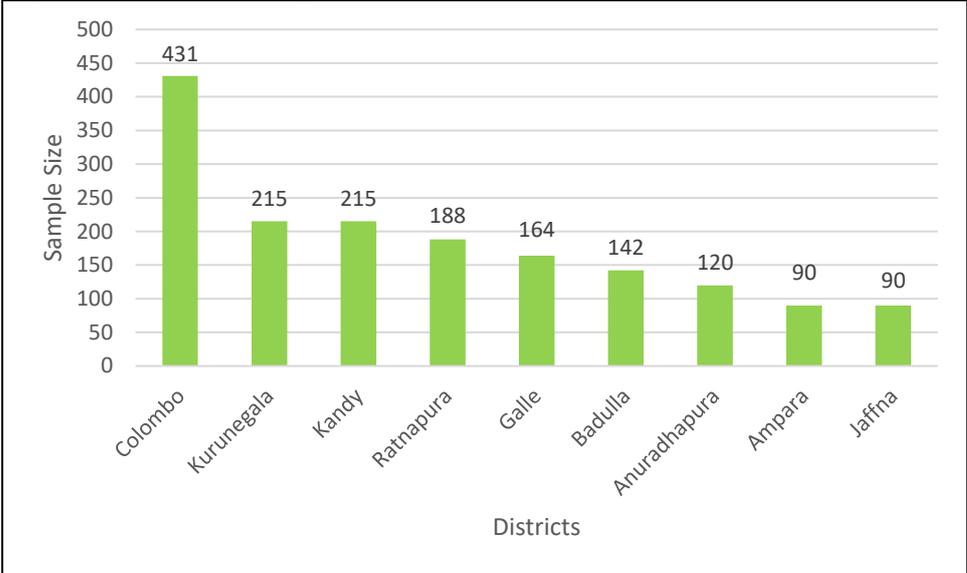
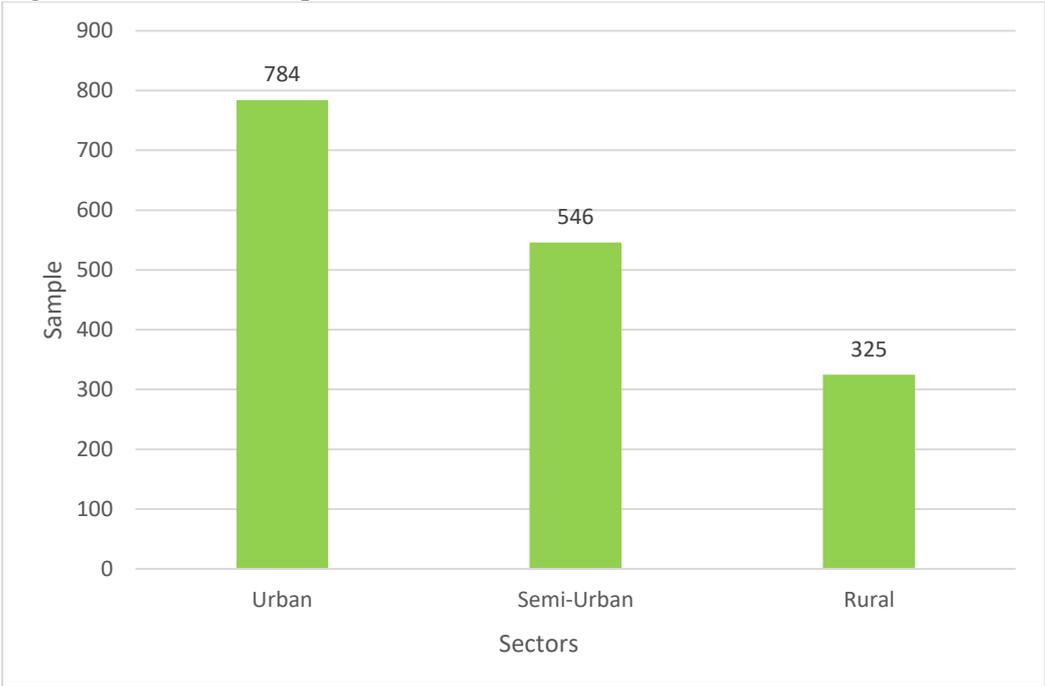


Figure 5: Selected Sample distribution –Districts



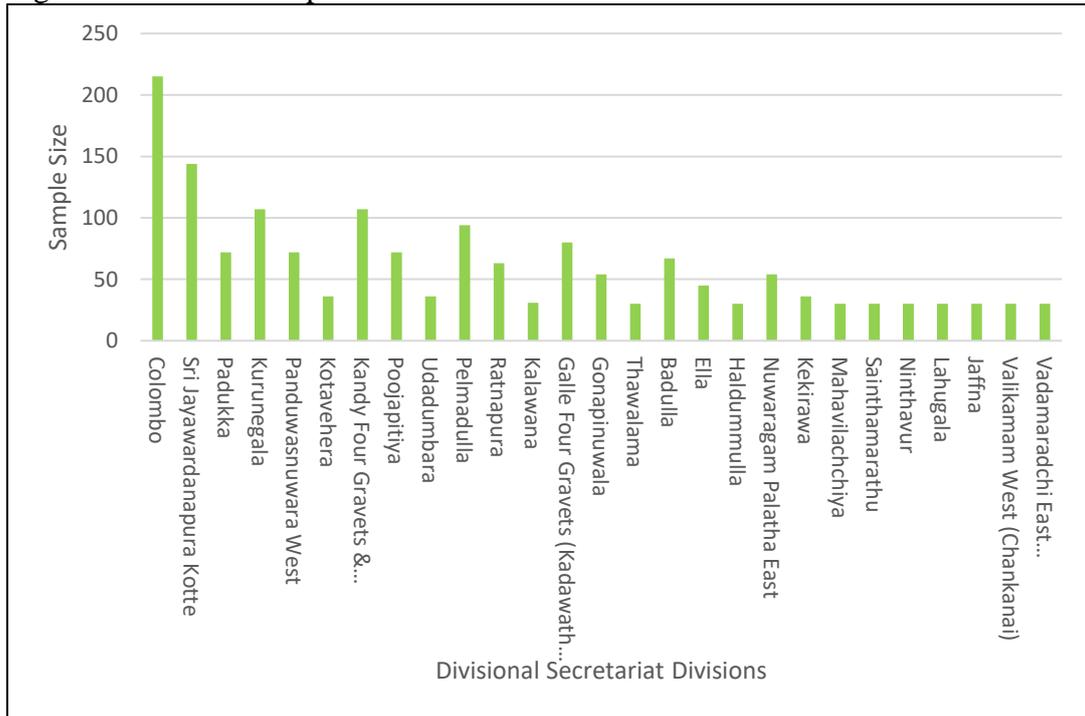
Source: NHRDC Three wheeler study 2017

Figure 6: Selected Sample distribution –Sector



Source: NHRDC Three wheeler study 2017

Figure 7: Selected Sample distribution of Divisional Secretariats



Source: NHRDC Three wheeler study 2017

## 04 Research findings

### 4.1 Socio economic profile of TW drivers

#### 4.1.1 Socio demographic profile of Three wheeler drivers

Table 1 depicts the demographic and socioeconomic characteristics of the sampled three wheeler drivers. The whole sample consists of males (99.9 %) while female representation is limited to 0.1 percent. Generally male representation in the informal sector is very high in the country. Where the age distribution of the sample is concerned, approximately 19 percent of the TW drivers are below 30 years of age and more than half of the sample is below the age of 40 years. As observed from the Figure 8, the highest representation is recorded between the ages of 31 to 40 years. Only 16 percent lies above the age of 51 years while 96 percent are in active labor force (below the retirement age 60 years). The sample shows an average age of 41 years with a standard deviation of 11 years distributing normally. Figure 11 shows that this nature of the age distribution that can be seen across all the sampled districts.

Where the age distribution of over the districts are concerned Rantnapura district reports the lowest average age while it is 42 years for Badulla, Colombo and Kununagala. Once the minimum age is taken, the lowest, 17 years, is reported from Kurunagala. The minimum age for Ratnapura is 18 while Colombo and Galle is 19. Taken at the other end, the highest age, 82, is also recorded from Rathnapura.

Considering Table 1 and 2 the Ethnicity and Religion the majority of the study population are Sinhalese (87%) and Buddhists (84.3%). This can be due to the nature of the ethnic composition in the country. The share of Muslims and Tamils are recorded as 7.2% and 6% respectively. The majority of the households consist of four members while about 48% of the respective households have only 3 or less than 3 members in the family. Thus the average family size is recorded as 3.4 persons with a standard deviation of 1.1.

Table 1 : Socio demographic profile of TW drivers

Age	%	Gender	%
Below 21	1.35	Male	99.9
21 – 30	18.3	Female	0.1
31 – 40	36.95		
41 – 50	27.45		
51 – 60	11.9		
Above 60	3.95		
		Race	%
		Sinhalese	86.0
		Sri Lankan Tamil	5.4
		Indian Tamil	0.5
		Muslim	7.9
		Burger	0.1
Religion	%	Family size	%
Buddhist	83.2	1	4.7
Hindu	4.4	2	11.0
Muslim	7.7	3	32.0
Catholic	4.6	4	39.0
		5	13.3
		Mean	3.4
		Std	1.1

Source: NHRDC Three wheeler study 2017

Table 2: Religion

Religion of TW drivers	Frequency	Percent
Buddhist	907	84.3
Hindu	45	4.2
Muslim	77	7.1
Catholic	47	4.4
Total	1076	100.0

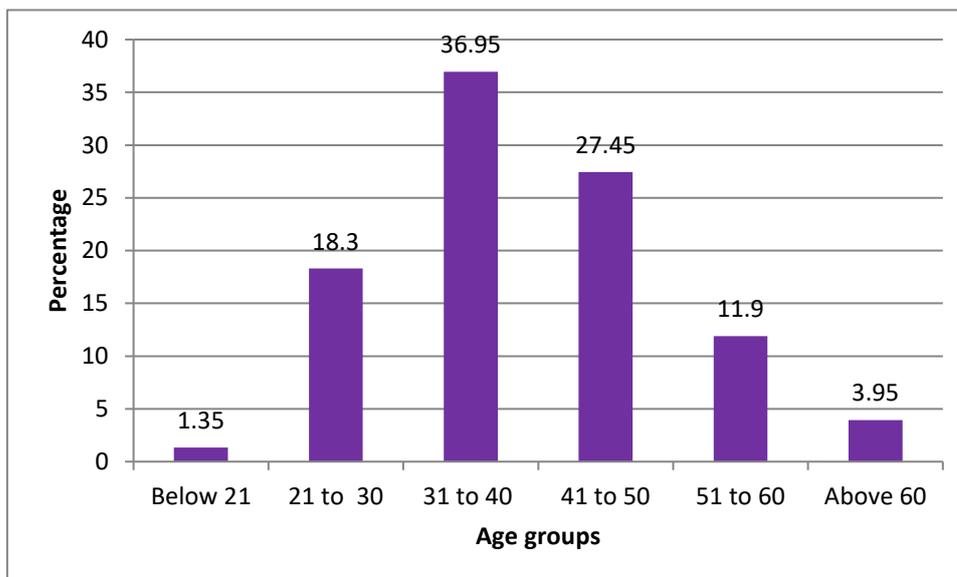
Source: NHRDC Three wheeler study 2017

Table 3: Ethnicity

Race of TW drivers	Frequency	Percent
Sinhala	936	87.0
Tamil Sri Lankan	55	5.1
Tamil Indian	6	0.6
Muslim	78	7.2
Burgher	1	0.1
<b>Total</b>	<b>1076</b>	<b>100.0</b>

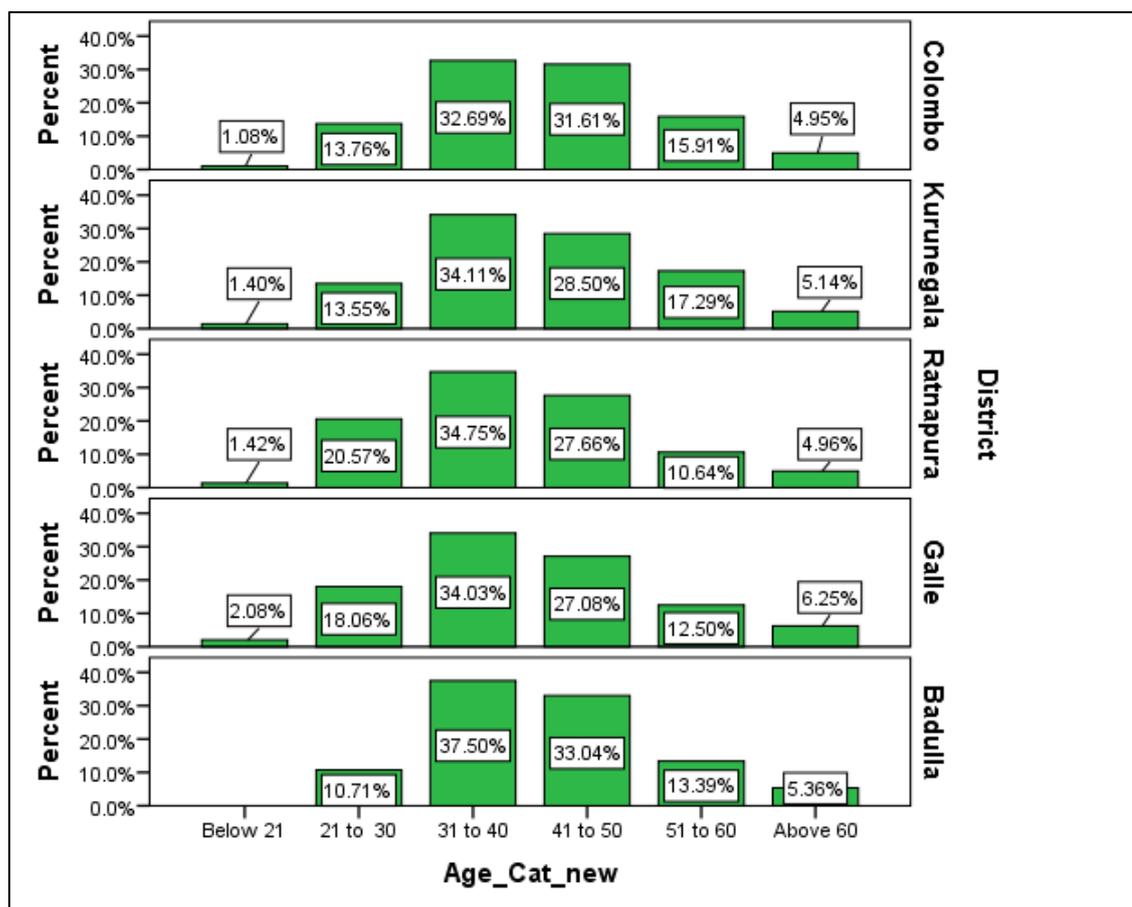
Source: NHRDC Three wheeler study 2017

Figure 8: Age distribution of TW drivers



Source: NHRDC Three wheeler study 2017

Figure 9: Age distribution across the districts



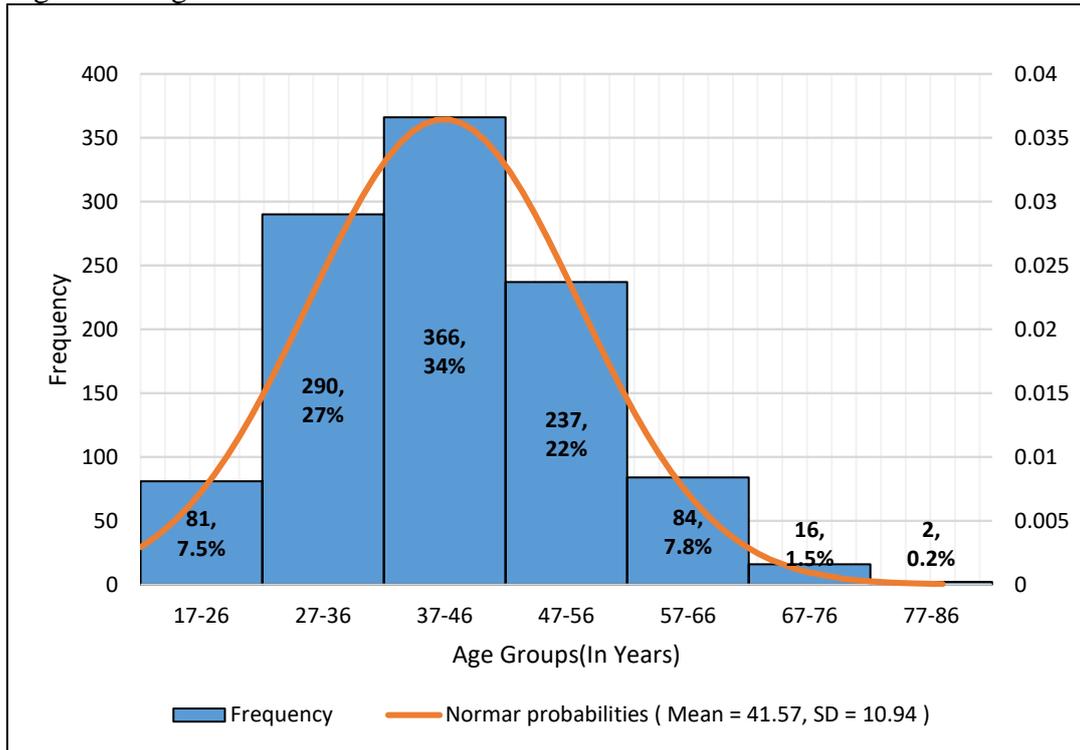
Source: NHRDC Three wheeler study 2017

Table 4: Age across districts

District	A01_Age			
	Mean	Maximum	Minimum	Count
Colombo	42.16	70.00	19.00	465
Kurunegala	42.09	70.00	17.00	214
Ratnapura	39.28	82.00	18.00	141
Galle	40.81	78.00	19.00	144
Badulla	42.03	75.00	24.00	112
<b>All</b>	<b>41.57</b>	<b>82.00</b>	<b>17.00</b>	<b>1076</b>

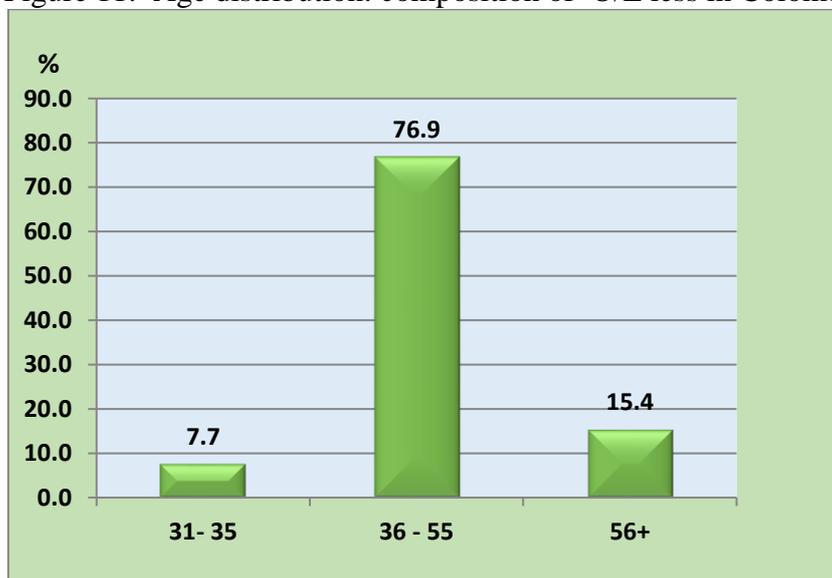
Source: NHRDC Three wheeler study 2017

Figure 10: Age distribution



Source: NHRDC Three wheeler study 2017

Figure 11: Age distribution: composition of O/L less in Colombo district

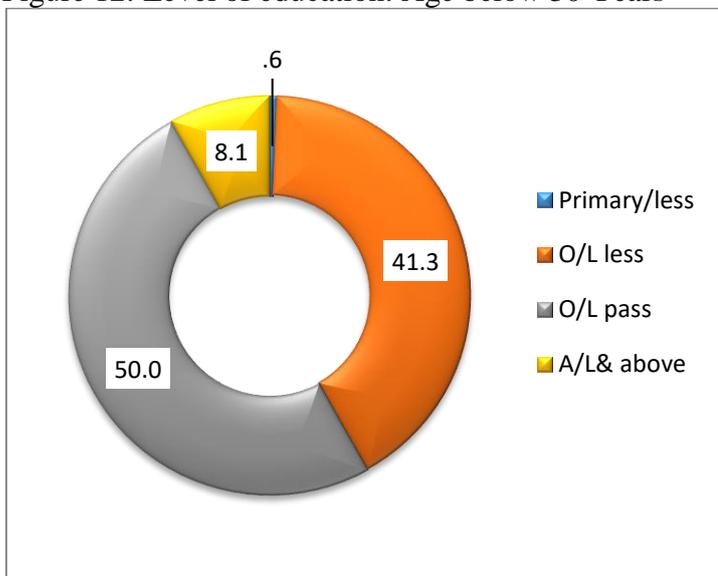


Source: NHRDC Three wheeler study 2017

## Educational background

Education background is shown in Figure 14. The majority (52%) of the sample has completed their studies up to grade 11 while only 3 % of the TW drivers are primary level or less educated, while the majority of them have completed up to the GCE Ordinary Level (52%) or passed Ordinary Level Examinations (40%), which indicates a higher level of basic educational attainment in the industry. A very minimum percentage of 5.1% have completed their A/L studies or higher studies. This educational profile is the same as the spouses' educational profile where the same is repeated in four districts except Kurunagala where the O/L passed members represent the majority. (Refer Figure 15).

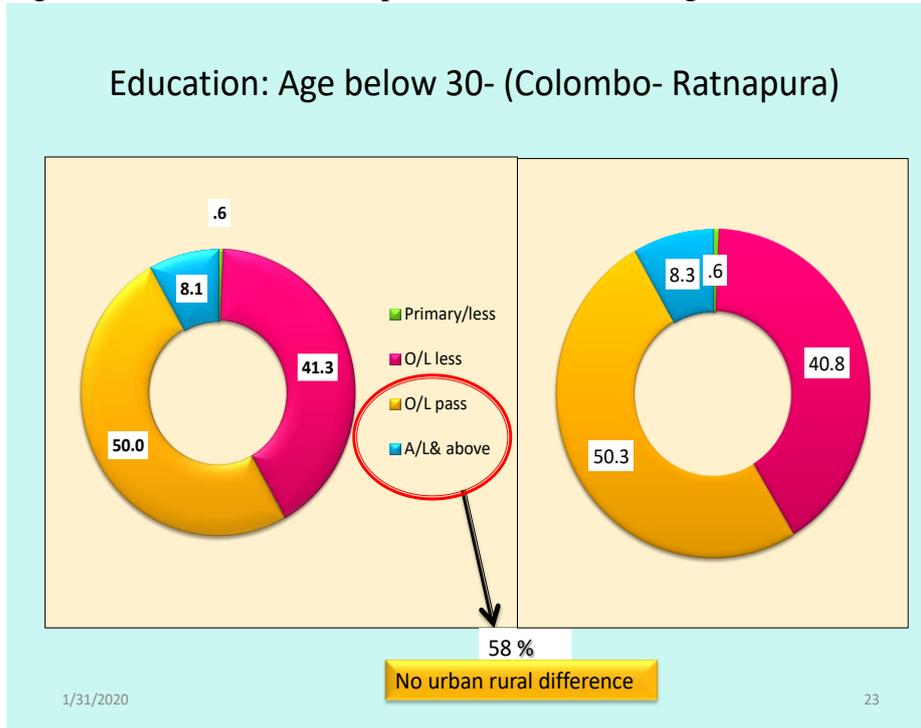
Figure 12: Level of education: Age below 30 Years



Source: NHRDC Three wheeler study 2017

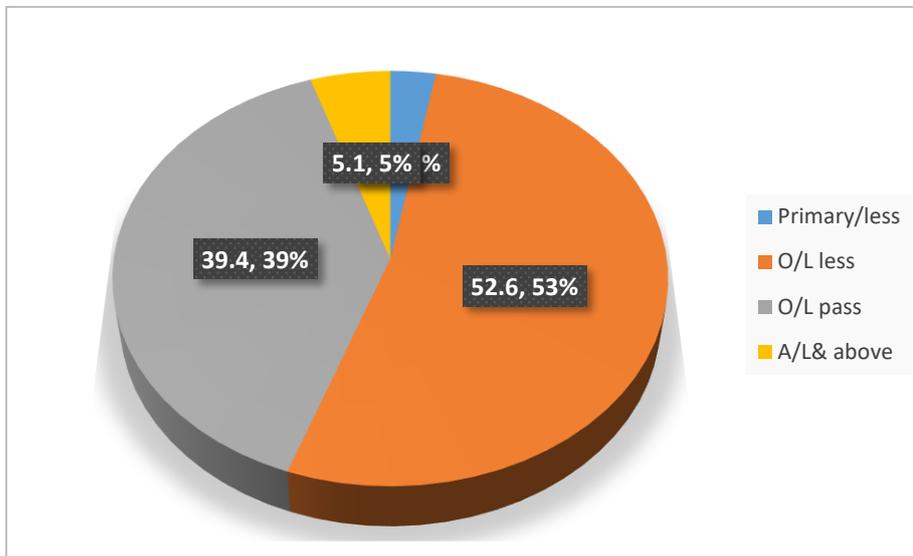
The level of education of the young group (\*below 30 years) is shown in Figure 12. Half of sampled young population acquired O/L qualification 8 percent of the young has completed A/L or higher. As shown in Figure 11, the same is true for all the other districts and also there is no sectoral difference could be found in this regard.

Figure 13: Urban- Rural comparison of education: Age below 30 Years



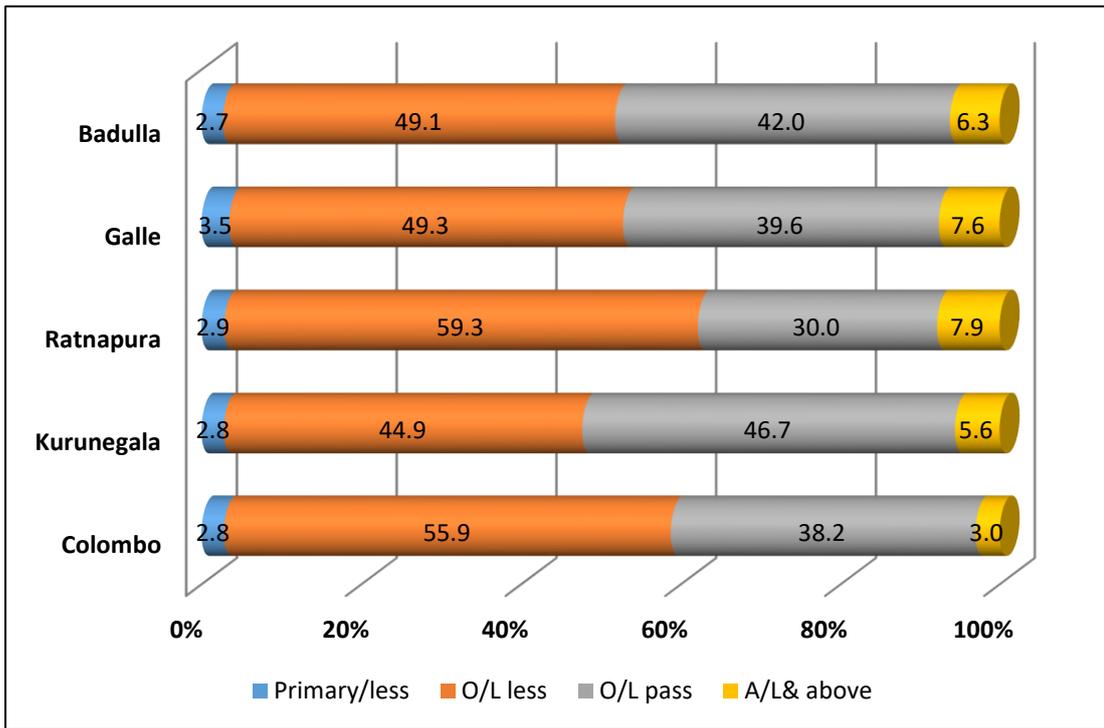
Source: NHRDC Three wheeler study 2017

Figure 14: Education level across the districts



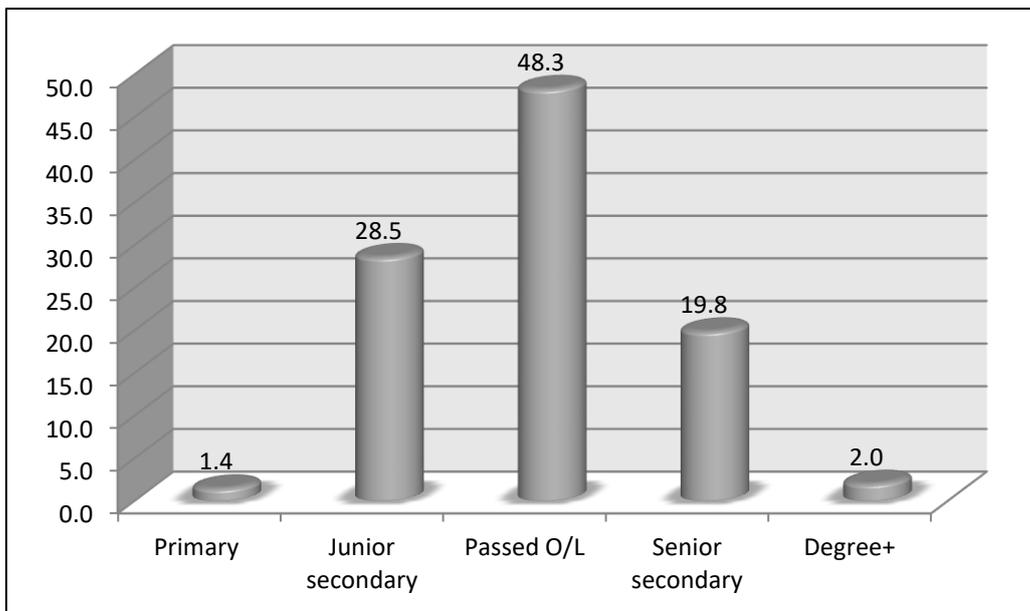
Source: NHRDC Three wheeler study 2017

Figure 15: Education: Spouse



Source: NHRDC Three wheeler study 2017

Figure 16 : Education: Spouse

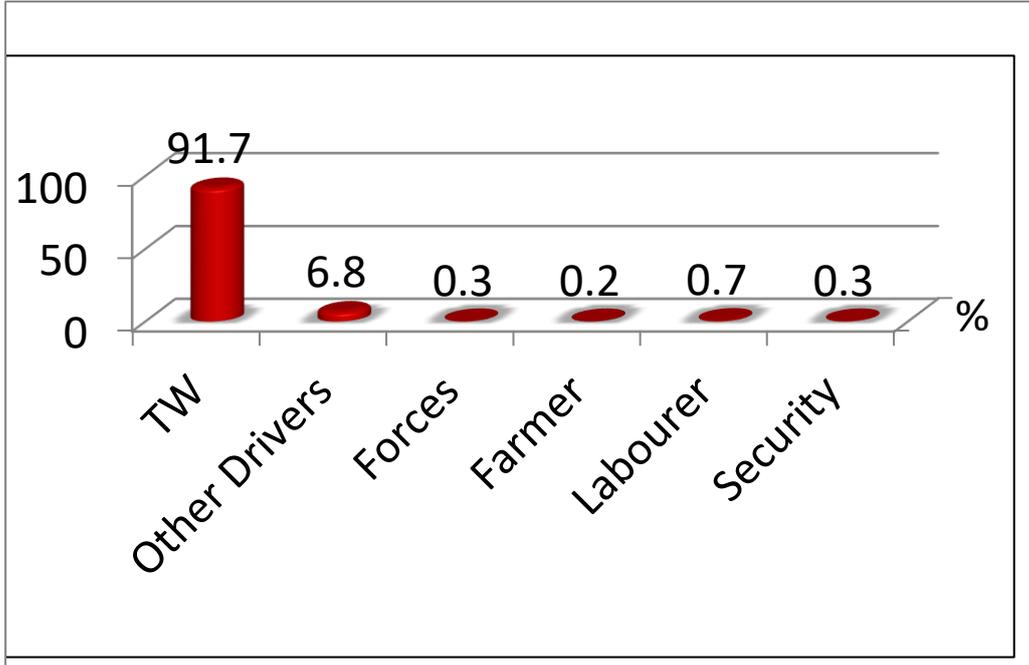


Source: NHRDC Three wheeler study 2017

When considering the education levels of the spouses, 1.4% have only completed their primary level education. Nearly 50% of the spouses have passed O/L while a little less than 30% have completed junior secondary (grade 6 to 10) level. The percentage of spouses who have completed their education beyond GCE (O/L) is about 20%. The percentage of graduates is very low (2%). Nearly 70 percent of the spouses have completed their O/L s while 44.5% TW drivers have the same level of education. It is significantly less than education level of their spouses. This data reveals that the adaptive capacity of spouses is high for TW drivers' livelihood changes and they are given necessary assistance and a constant source of support to entrepreneurship activities if any (Refer Figure 15).

The results, presented in Figure 17, shows the main occupations of the sampled population. The majority (almost 92%) are TW drivers. That is to say, that 92% of three-wheeler drivers are employed on a full time basis to make their living. This contribution remains unchanged for all the sampled districts. A small percentage employ themselves as drivers (6%) and a negligible percentage are employed in armed forces, labourers and security guards. Compared to the share full time TW drivers in sample, the contribution of the other jobs are negligible. All in all, of the five (as in DCS records) categories of employment, own account workers account for about 99 percent among the TW drivers.

Figure 17: Main Occupations



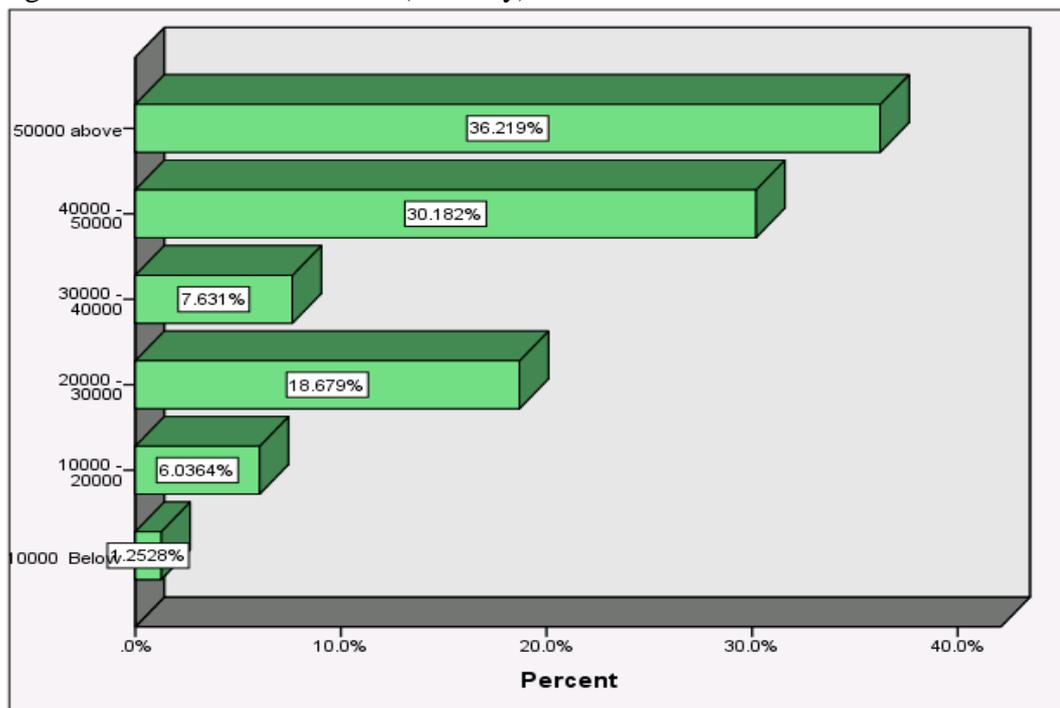
Source: NHRDC Three wheeler study 2017

#### 4.1.2 Economic characteristics of TW drivers

##### Earnings:

Income is a difficult variable to measure since people are accustomed to hide their income details. However, revealed data shows that average monthly income earned by a TW driver is LKR. 46000 which reduces to a little above LKR.42000 with the removal of influential data points. Data confirms the majority (66%) in the sample earns above LKR. 40,000 per month. Figure 19 demonstrates daily income data of TW drivers. As it is shown, a TW driver earns, on average, LKR. 1500-2300 per day. Mostly occurred value is LKR.1500. Almost 5 percent of the sample earns LKR. 2500 a day (Refer Figures 18-21).

Figure 18: Income distribution (monthly)

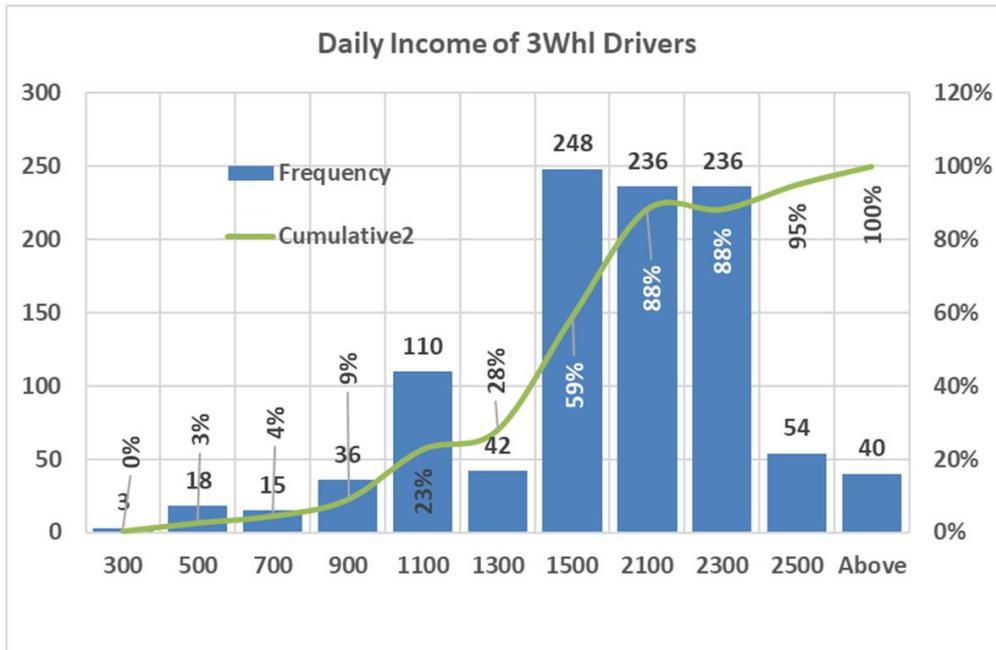


Source: NHRDC Three wheeler study 2017

Figure 22 shows the frequencies of the income figures. Accordingly, 37% of the sampled population earns LKR 31840 while 31% earns LKR 45360. 11% of TW drivers earn LKR 58880 and 1 % earn LKR112960 a month. When this income distribution is considered, it is clearly seen that more than one fourth (25%) of the TW drivers earn an income between LKR. 20,000- LKR.30, 000 while another one fourth (25%) of the TW

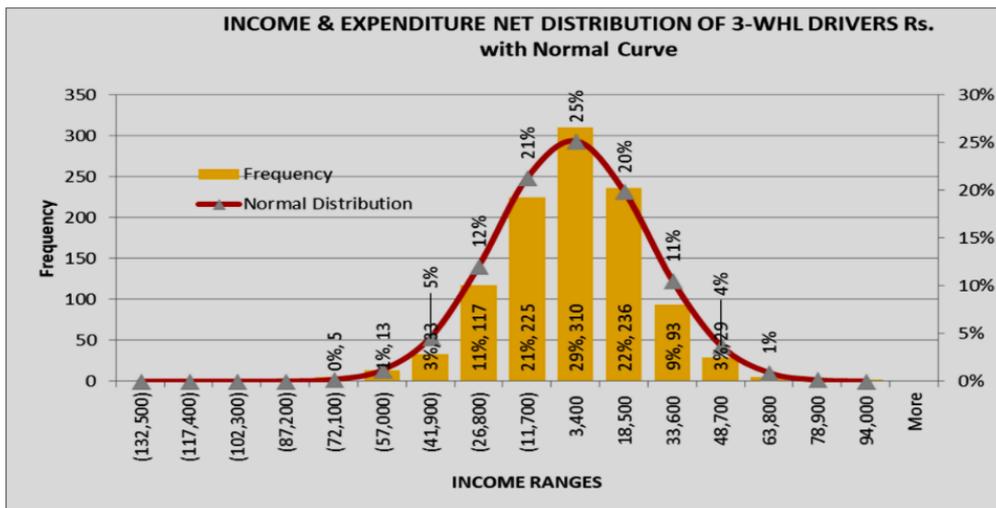
drivers earn an income between LKR. 40,000 – LKR. 50,000. Nearly 30% of the TW drivers earn an income more than LKR. 50,000 which is a commendable income level to reach. The most outlandish feature is that there are people (5%) who earn more than LKR.100,000.00 from this occupation.

Figure 19: Income distribution (Daily)



Source: NHRDC Three wheeler study 2017

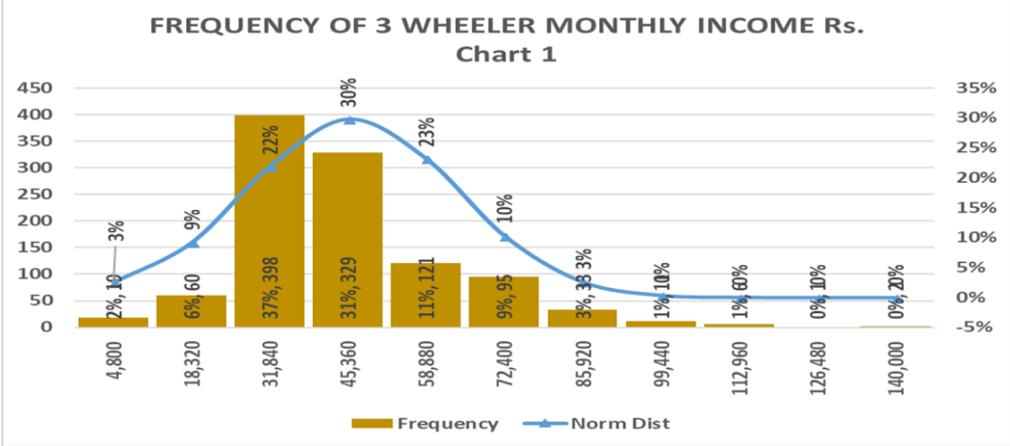
Figure 20: Net Income distribution (monthly)



Source: NHRDC Three wheeler study 2017

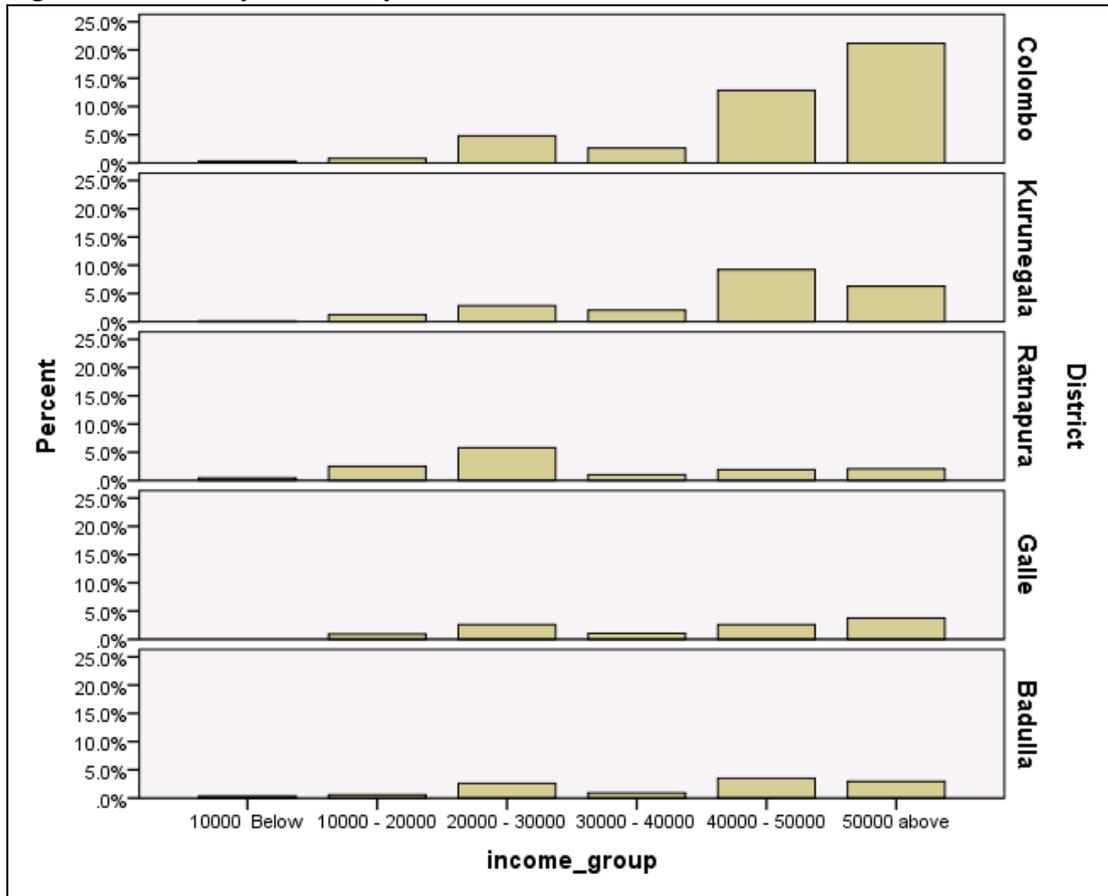
According to Figure 20 net income of TW drivers has a normal distribution with the average net income of LKR 3400. Moreover 61% of TW drivers are earning positive net income and rest are negative.

Figure 21: Income distribution (monthly)



Source: NHRDC Three wheeler study 2017

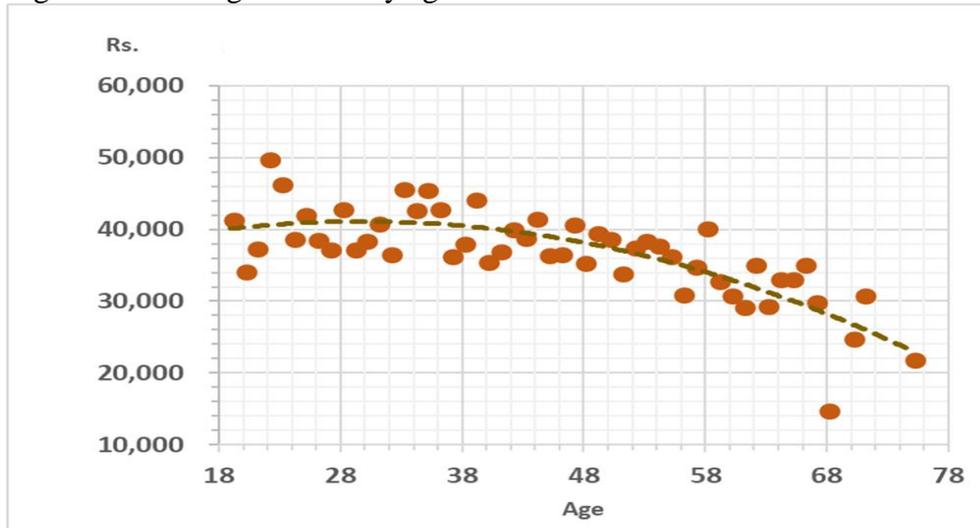
Figure 22: Monthly income by district



Source: NHRDC Three wheeler study 2017

The income earned by a TW driver in all 5 districts is distributed in a negatively skewed manner. Majority of the TW drivers in Colombo earn the highest income of more than LKR 50,000 when compared with the other districts. The income distributions of Colombo and Kurunegala have similar features where a higher percentage earn an income above LKR40,000. But TW drivers in all the other districts relatively earn a lesser income when compared to Colombo and Kurunegala districts. Majority of the TW drivers in the Rathnapura district earn an income between LKR. 20000-30000. The income distribution in Galle and Badulla are also somewhat similar to each other reporting very similar percentage values for all income categories. But these values are relatively lesser to that of Colombo and Kurunegala (Refer Figure 22). When considering the per capita income, an average amount of LKR 14,751 is identified. The per capita income distribution takes the shape of a normal distribution with mean and mode valued as LKR 14,000.

Figure 23: Average income by age



Source: NHRDC Three wheeler study 2017

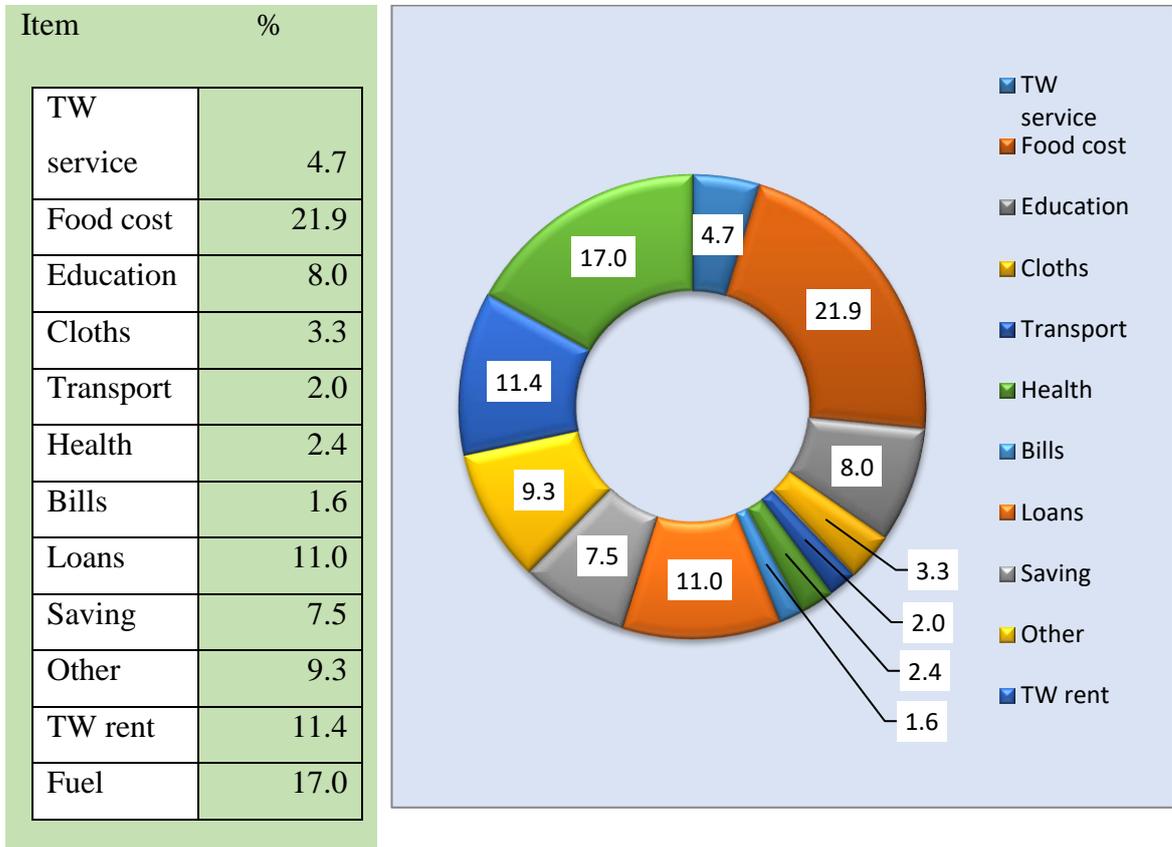
Income variation according to age is shown in Figure 23. Once the movements of the income points along the age distribution is taken, slight increase can be seen up to 30 years and then it begins to fall.

**Expenditure:** Considering as a percentage, nearly half of the population (45%) of the TW community have a monthly expense between LKR. 10,000 - 30,000. 40% of the sample incur an expenditure over LKR. 40,000. Nearly one fourth of the sample incur expenditure above LKR.50, 000. Where household expenditure is concerned, the average expenditure of a household is nearly LKR. 11,300. But considering the mode, the majority experiences a household expenditure of LKR. 10,000 which is lesser than the calculated mean value.

Household expenditure can be categorized under 12 categories as TW service cost, Food cost, Education expenditure, Clothing expenditure, Transport costs, Health expenditure, Bills and Loan payments, savings, TW rent and fuel. When comparing the expenditure structure of a household, the largest expenditure percentages are recorded under food, loans, fuel cost and TW rent. A significantly large portion (21.9%) of the income is allocated for food which is nearly LKR. 21500 and the second highest (17%) is recorded as the expenditure for fuel having a sum of LKR16664. The health and clothing cost remains at a very low level in most of the households recording an amount of LKR 2,344

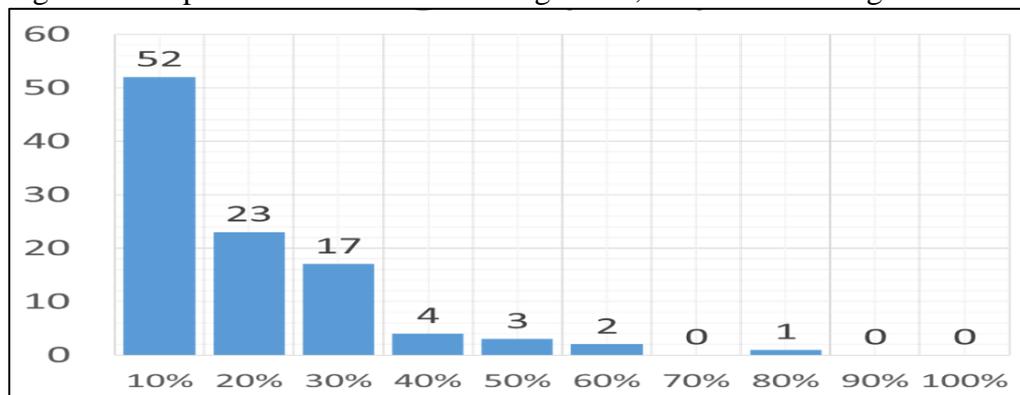
and 3,258 respectively. There is a considerable amount allocated for education purpose which is nearly LKR 8000 (Refer Figures 23 for detailed expenditure illustrations).

Figure 24: Expenditure distribution by spending category



Source: NHRDC Three wheeler study 2017

Figure 25: Expenditure distribution of Cigarettes, Alcohol and Drugs



Source: NHRDC Three wheeler study 2017

Table 5: Saving

<b>Willing to save income</b>	<b>Percent</b>
No	4%
Yes	96%

Source: NHRDC Three wheeler study 2017

Table 6 : Methods of Saving

<b>Method of saving (first preference)</b>	<b>Percent</b>
Deposit daily income at a recognized bank	98%
Seettu	2%

Source: NHRDC Three wheeler study 2017

Table 7: Reasons for not saving in a formal way

<b>Reasons for not saving</b>	<b>Percentage</b>
Income is not adequate	87%
Collect money in a till	3%
Not practical	7%
No need to save for the Government	3%

Source: NHRDC Three wheeler study 2017

When banking habits specially in terms of saving is taken (Table 5), 98% stated that they deposit daily in a recognized bank. Out of the TW drivers who are not willing to save, the majority (87%) claimed that they don't have enough income to save (Refer Table 7).

## 4.2. Economic Aspects and characteristics of the Three Wheeler Market

### 4.2.1 Three wheeler type, ownership and pricing

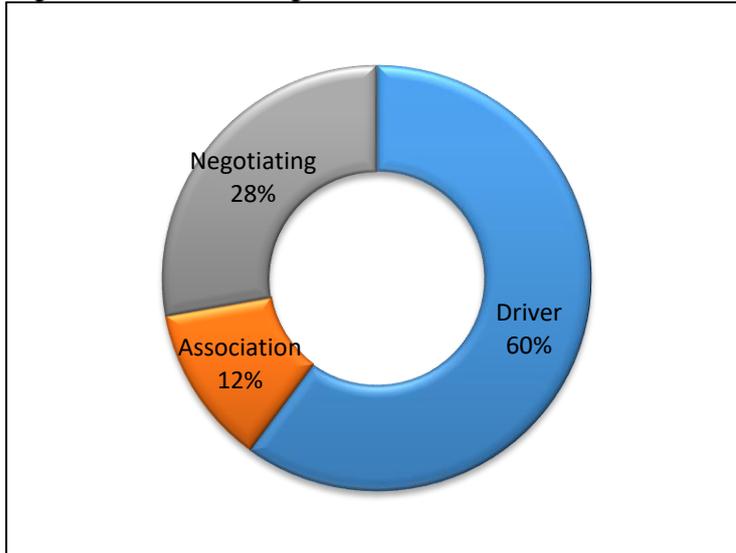
Table 8: Three wheeler type, ownership, purchasing mode

Item	%	Item	%
<u>Type</u>		<u>Buying mode</u>	
Two stroke	17.4	By cash	14.2
Four stroke	82.6	By Lease	83.8
		By Loan	1.8
		Other	0.2
<u>Ownership</u>		<u>Meter</u>	
Own	89.9	Yes	75.7
Company	4.5	No	24.3
Rent	5.2		
Other	0.4	<u>Registered park</u>	
		Yes	89.5
		No	10.5

Source: NHRDC Three wheeler study 2017

According to the survey findings illustrated in Table 8, the majority (82.6%) of three-wheelers are 4-stroke engines which have high efficiency and lower emissions than 2-stroke engines. Further, nearly 90% of respondents are self-owned TW drivers who bare only fuel and other direct costs. In addition, 5% of the three wheelers run on rent basis. When the purchasing mode is concerned, the majority (85%) has used leasing or loan facilities to buy the vehicle while the rest have utilized their savings. This indicates that less restricted leasing facilities seemed to be a triggering factor of increasing TW population in the country on one side and creating a considerable market for financial institutions on the other.

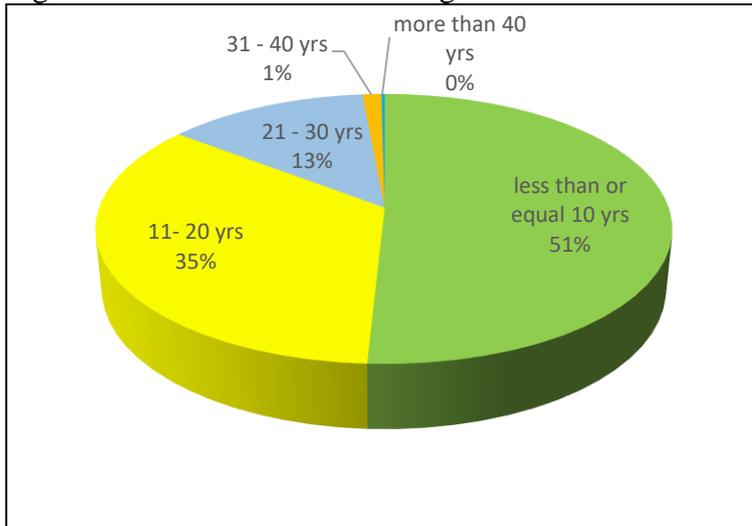
Figure 26: Fare Pricing



Source: NHRDC Three wheeler study 2017

Moreover, as the results portrayed (Refer Figure 25 and Table 8) the most popular pricing strategy is “driver driven”, (60%), while about 28 percent of fare decisions through the negotiations showing a typical nature of an unregulated less competitive market. In contrast, more than one third of TWs have fixed meters as the metered taxies have become the most preferred method of transport by the consumers and this trend has resulted in 75.7% of three wheelers obtaining and fixing meters for hires. This brings to a point to rethink the effectiveness of fixing meters in TW clearly showing the prevalence clash between the logic of the state and the market. In other words, there is a gap between the implementation and effectiveness of newly imposed regulations. It seems that TW drivers have fixed meters merely as an escaping strategy. On the other hand, almost 90 percent of them are in operation by parking the vehicle at registered parks through which they have been given an oligopolistic type market power. However, a small percentage (9.7%) still prefers to be unregistered in a park.

Figure 27: Duration of TW driving



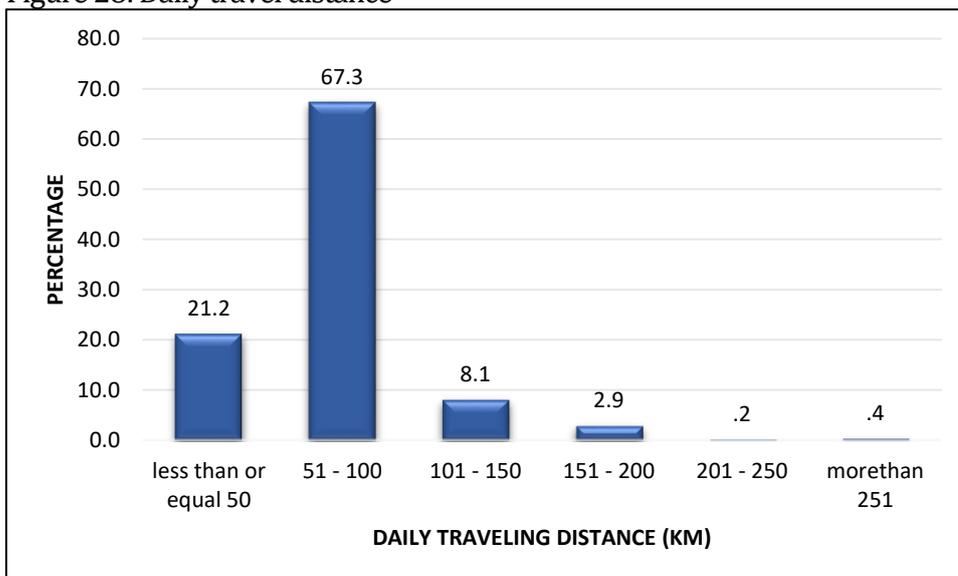
Source: NHRDC Three wheeler study 2017

Further, it seems that the majority (51%) of them are involved in TW driving for 10 years or less. Almost 14% of them have made their living from TW for more than 20 years.

### Daily travel distance

Talking about the daily travel distance as shown in Figure 27, nearly 21% of the sample population travels less than 50 km per day. A considerable percentage of TWs (67%) run between 51 to 100 km per day while the average distance travel is around 81 km.

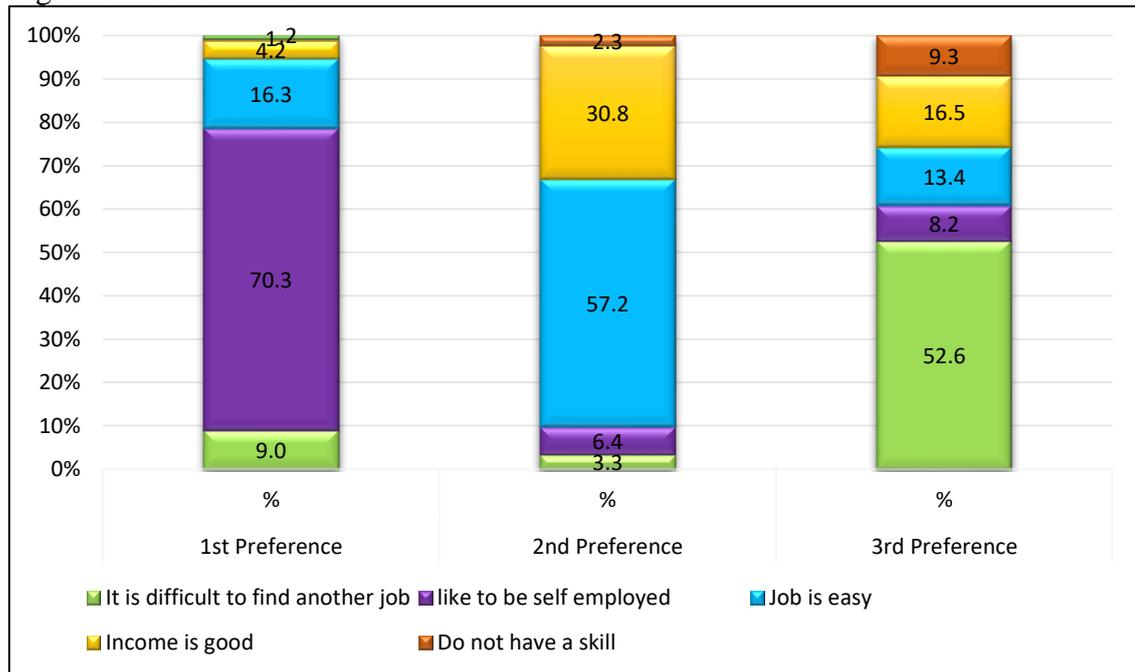
Figure 28: Daily travel distance



Source: NHRDC Three wheeler study 2017

## 4.2. 2 TW drivers' Perceptions on Motivation, issues and Regulations

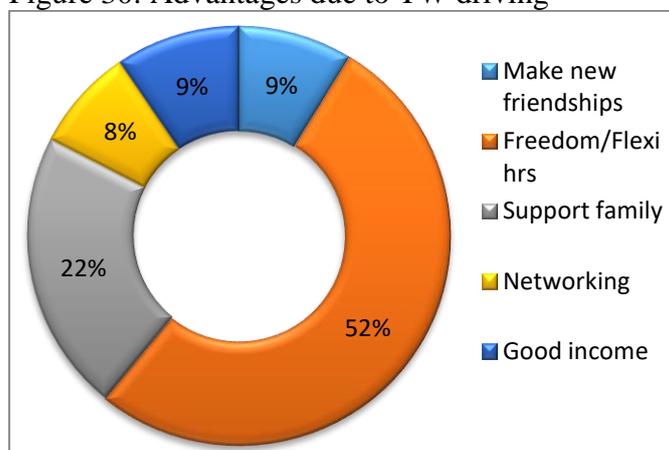
Figure 29: Motivation



Source: NHRDC Three wheeler study 2017

The first and the foremost factor of motivation to become a TW driver is because they would prefer to be self-employed while ease of the job has been considered secondly. It is clearly evident that becoming a TW driver has become an attractive method of employment in these districts. The difficulty of finding another job is thirdly preferred in making the choice of becoming a TW driver (Refer Figure 28).

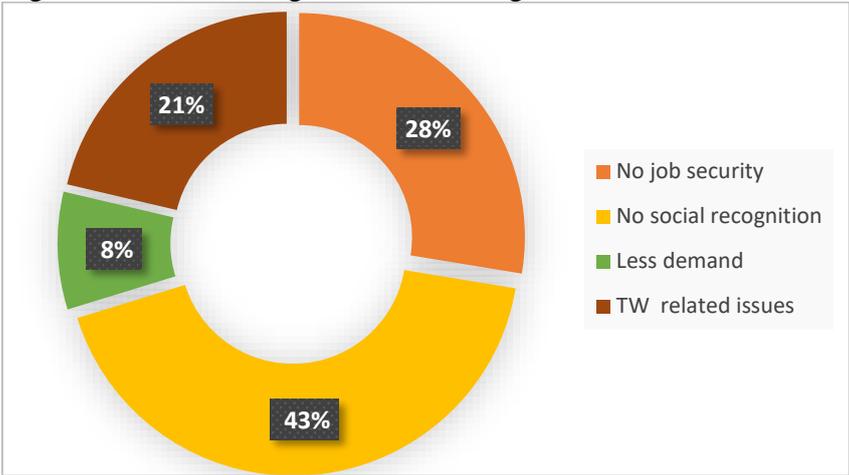
Figure 30: Advantages due to TW driving



Source: NHRDC Three wheeler study 2017

The biggest advantage gained through the emergence of TWs (52%) is the freedom and flexibility of working hours in the job. Also, a considerable amount (22%) benefits such as the chance to support their families through this occupation attracts drivers. Other than these merits this job provides a good source of income, a source to make new friends and also a very effective method of networking (Refer Figure 29).

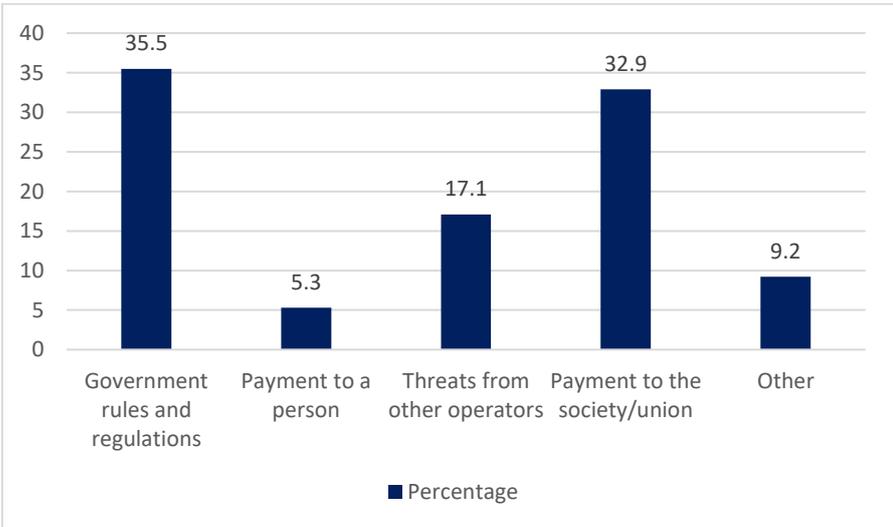
Figure 31: Disadvantages of TW driving



Source: NHRDC Three wheeler study 2017

Even though this job provides satisfaction to the TW drivers, it has few disadvantages too as in Figure 30. The most highlighted disadvantage is no social recognition to TW drivers (43%). Furthermore, this job provides no job security as it is prone to so many uncertainties. The TW related issues are commonly seen in this field of work.

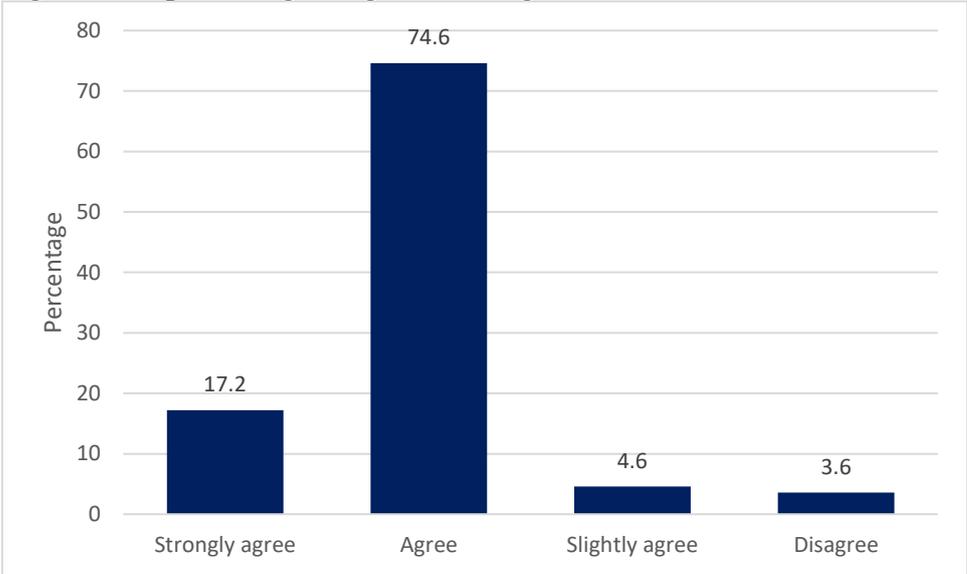
Figure 32: Obstacles in park registration



Source: NHRDC Three wheeler study 2017

As shown by the Figure 31 in registering at a new park, the majority of the TW drivers (35.5%) face the obstacle of adapting to Government rules and regulations. There again another high percentage is facing the obstacle of payments to the society/union in settling a permanent fee for the union (32.9%). Threats from other operators (external parties who have the power to influence TW drivers) is also having a considerable impact upon the newly registered TW driver.

Figure 33: Opinion regarding minimizing number of three wheels



Source: NHRDC Three wheeler study 2017

There is a strong opinion among the TW drivers supporting minimizing the number of three wheelers in operation. Only 3.6% of the respondents have disagreed to the opinion on minimizing the number of three-wheels while the rest (96%) of the sample is agreed to the above opinion at some level (Refer Figure 32).

**4.2.2.1 Government involvement to improve lifestyle of TW drivers**

When considering the focus given by the government to enhance the lifestyles of the TW drivers, nearly, 99% believe that providing sufficient support to them is equally important. But there again a very low percentage believe that government support isn't a must at all. Figure 33 summarizes TW driver's consent on proposed rules and regulations.

### **Giving a uniform**

The majority 67% of the sample believes that having a uniform is a necessity as they agree to support on such implementation of regulation. But 33% of the sample believes that they do not see a necessity in regulating a uniform among the TW drivers.

### **Ticket to passenger**

70% of the sample agrees to an extent that a ticket should be provided to the passenger at each hire to enhance the quality of service. But the remaining 30% do not see the importance of issuing a ticket and they disagree on such implementation.

### **ID for TW drivers**

Nearly 99% of the sample believes that there should be a method to provide IDs for the TW drivers. They believe that this will enhance the level of security and builds trust within the passengers and increase the quality of service.

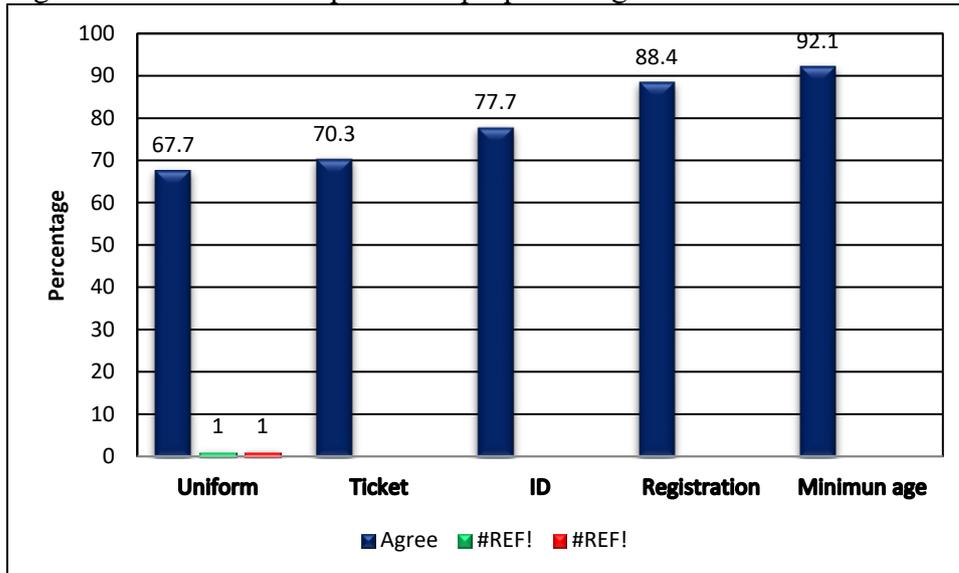
### **Proper registration**

The data clearly depicts that 97% of the sample is on the positive side of including a proper registration to the TW drivers.

### **Minimum age requirement**

When considering the minimum age requirement, nearly 8% of the sample disagrees on the fact that the minimum age should be regulated. But the majority 92% of the population agree on the fact that the minimum age requirement should be regulated in the profession.

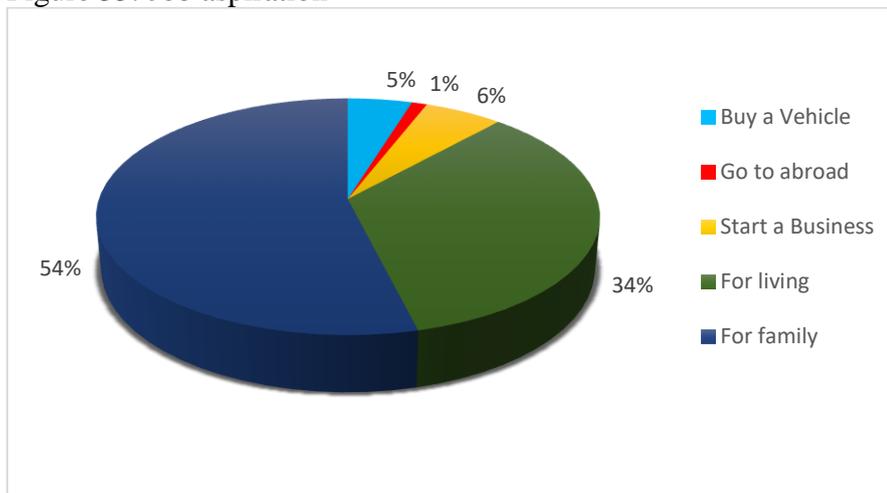
Figure 34: TW drivers' opinion on proposed regulations



Source: NHRDC Three wheeler study 2017

#### 4.3 Three Wheeler drivers' Job aspiration, choice and prospection

Figure 35: Job aspiration



Source: NHRDC Three wheeler study 2017

According to the first preference of job aspiration, the majority of TW drivers' (54%) job aspiration is for family maintenance followed by the living expenses and to start his/her own business (Refer Figure 34). Moreover, according to the second and third preferences highest job aspirations are for family and for living respectively (Annex 1)

Figure 36: Job continuity of TW Drivers

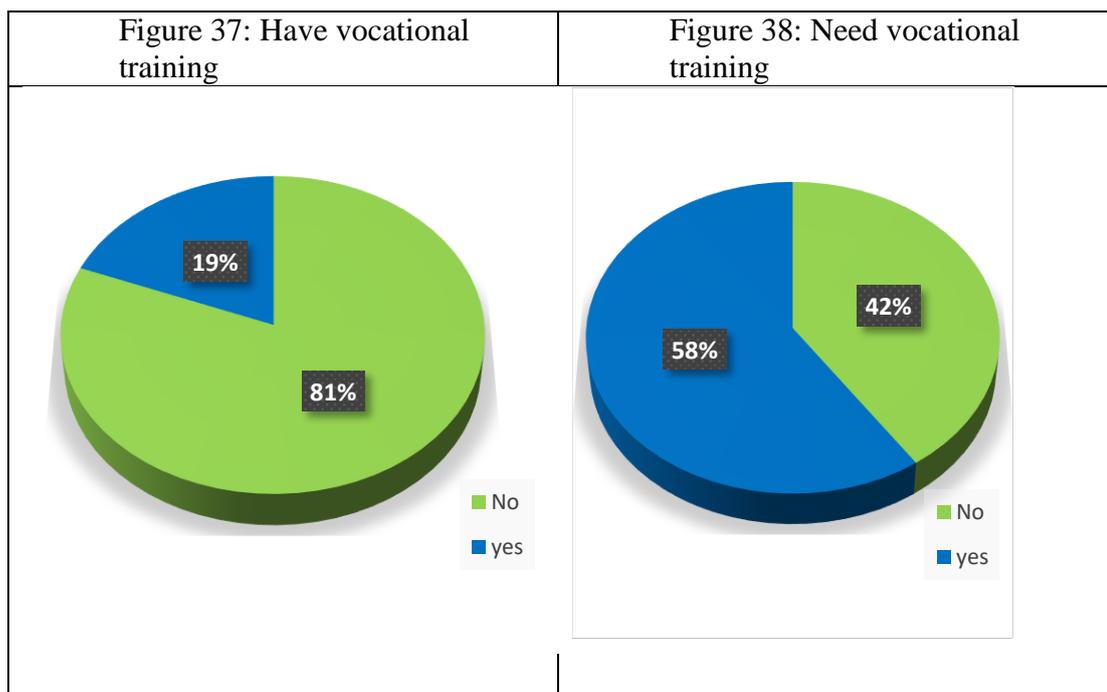


Source: NHRDC Three wheeler study 2017

When considering the future job prediction of the TW drivers, nearly 58% stated that being a TW driver will be their lifetime job and 30% of the sample is employed in this job due to frictional unemployment. But 12% of the sample has no direction in finding the purpose to remain in this job. This crowd might either remain or divert their labour into other jobs in future (Refer Figure 35).

### **The willingness of vocational training**

According to figure 36: and 37: majority of the TW drivers (81%) do not have any vocational training experience. Out of them majority (58%) of the sample believes that vocational training should be given to TW drivers and there is quite a considerable percentage that does not see the importance of vocational training. Once the total sample is considered, only 42 % is not willing to follow vocational training.



Source: NHRDC Three wheeler study 2017

### Training Courses Followed by Some Three Wheel Drivers

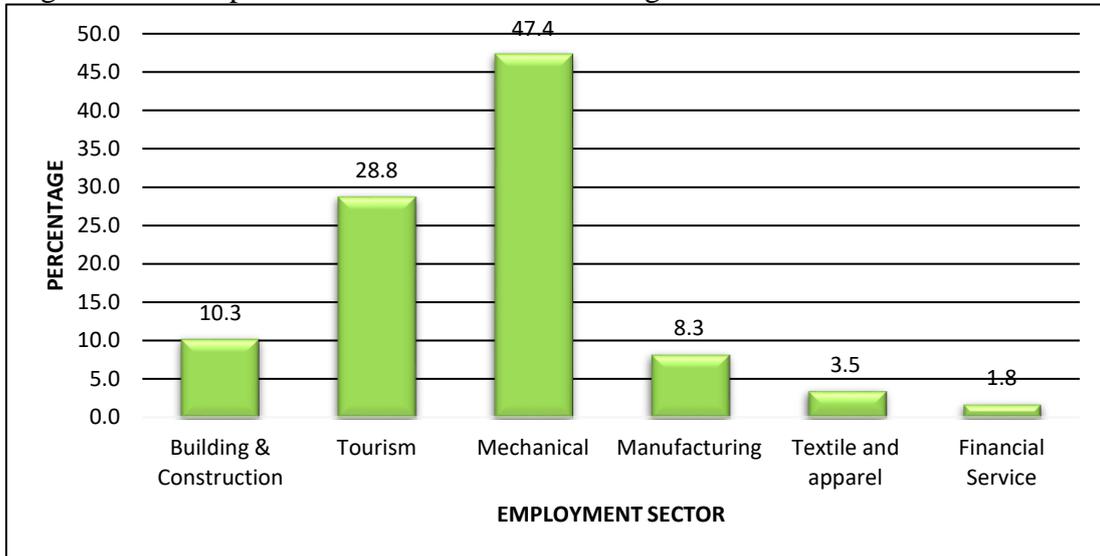
- |                                         |                          |
|-----------------------------------------|--------------------------|
| 1. Accounting                           | 14. Electrical Course    |
| 2. AC Mechanic                          | 15. Fishing Course       |
| 3. Apparel Course                       | 16. Flowery culture      |
| 4. Automobile                           | 17. Graphic Design       |
| 5. Beauty culture                       | 18. Gem and Cutting      |
| 6. Certificate Course in Social Service | 19. Hospitality          |
| 7. Carpentry                            | 20. HNDE                 |
| 8. Care giving Course                   | 21. Masonry              |
| 9. Computer Course                      | 22. Machine Operating    |
| 10. Draftsman                           | 23. Lab Assistant Course |
| 11. Diploma in Business management      | 24. Product Supervisory  |
| 12. Driving Course                      | 25. Shoe making          |
| 13. English Course                      | 26. Photography          |
|                                         | 27. Welder Course        |
|                                         | 28. Plumbing             |

### Field preference

Considerable number of the TW drivers who responded stated that they would like to be in the Tourism and Mechanical industry (76%). Other than those two fields of work TW drivers believe that they would like to engage in the Building and Construction Industry,

Manufacturing, Textile industry and the financial services. But higher preferences are to be engaged in Mechanical industry (47.4%).

Figure 39: Field preference for vocational training

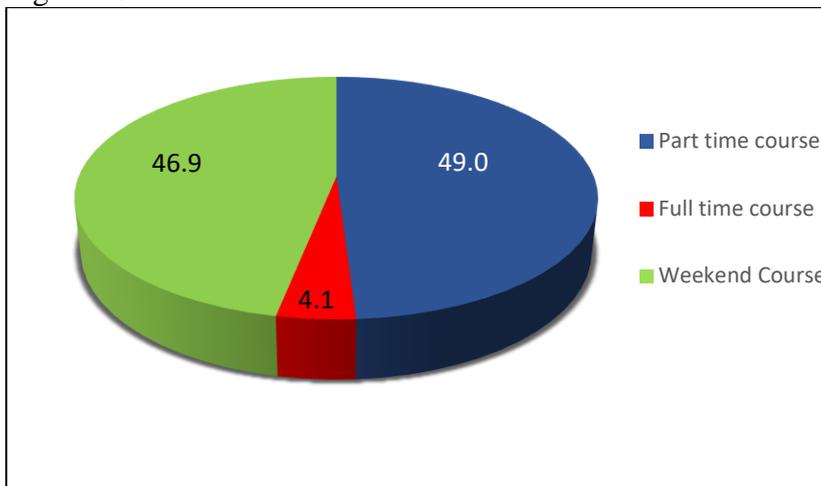


Source: NHRDC Three wheeler study 2017

### Time preference

There is a very high likelihood of TW drivers to engage in courses part time basis and weekend courses. Nearly 48% of the respondents like to follow part time courses while 46.2% of the respondents like to follow weekend courses. Only a very few percentage is satisfied to follow full time courses (Refer Figure 39).

Figure 40: Time Preference

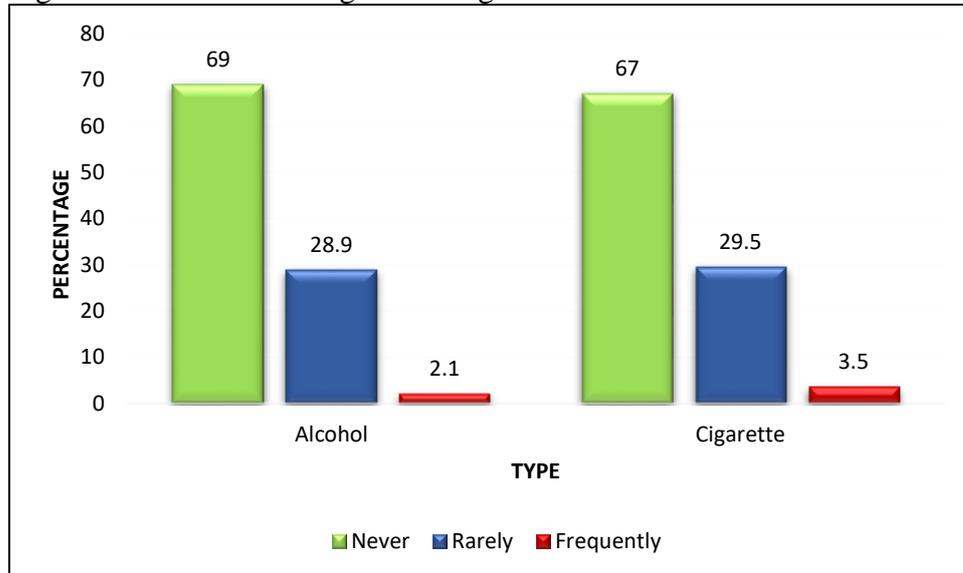


Source: NHRDC Three wheeler study 2017

#### 4.4. Risk profile of Three Wheeler drivers

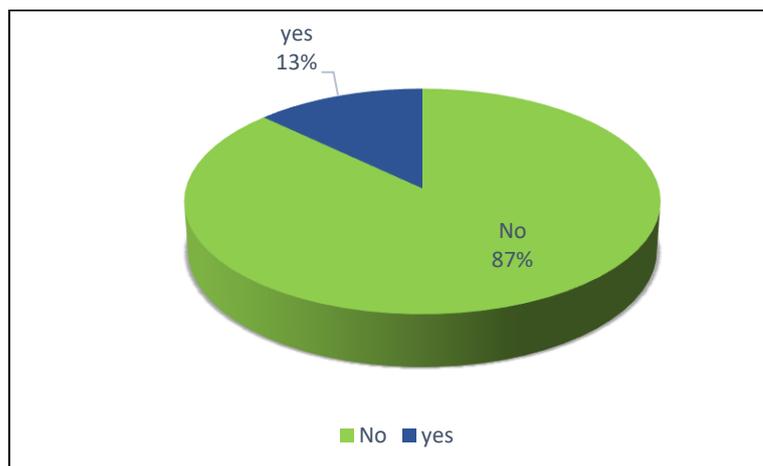
**Alcohol cigarette usage:** Around 70% of the TW drivers stated that they neither consume alcohol nor cigarette. But around (30%) rarely use alcohol and cigarette which is comparatively low and insignificant percentage of them frequently use the both.

Figure 41: Alcohol and cigarette usage



Source: NHRDC Three wheeler study 2017

Figure 42: Drink and drive



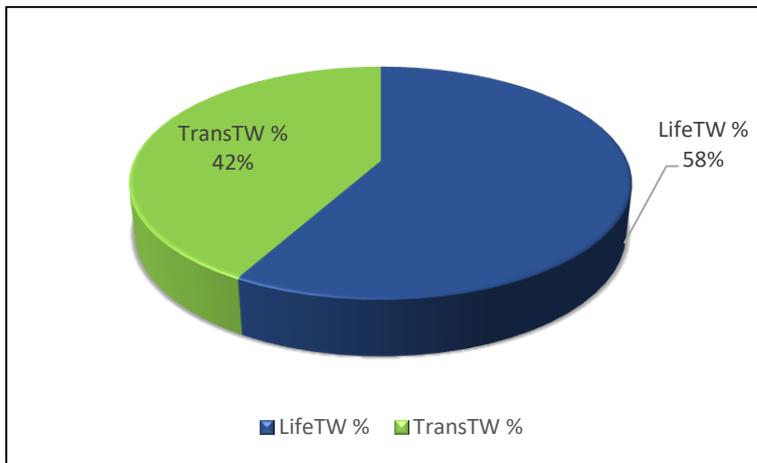
Source: NHRDC Three wheeler study 2017

As in Figure 41, 87% of the sample admitted that they do not drink and drive. But there is a low percentage of TW drivers that drinks and drive. But as a whole the TW drivers are quite aware of the high risk that they would be fined if caught.

#### 4.5 Bivariate Relationships: Occupational choice of TW drivers

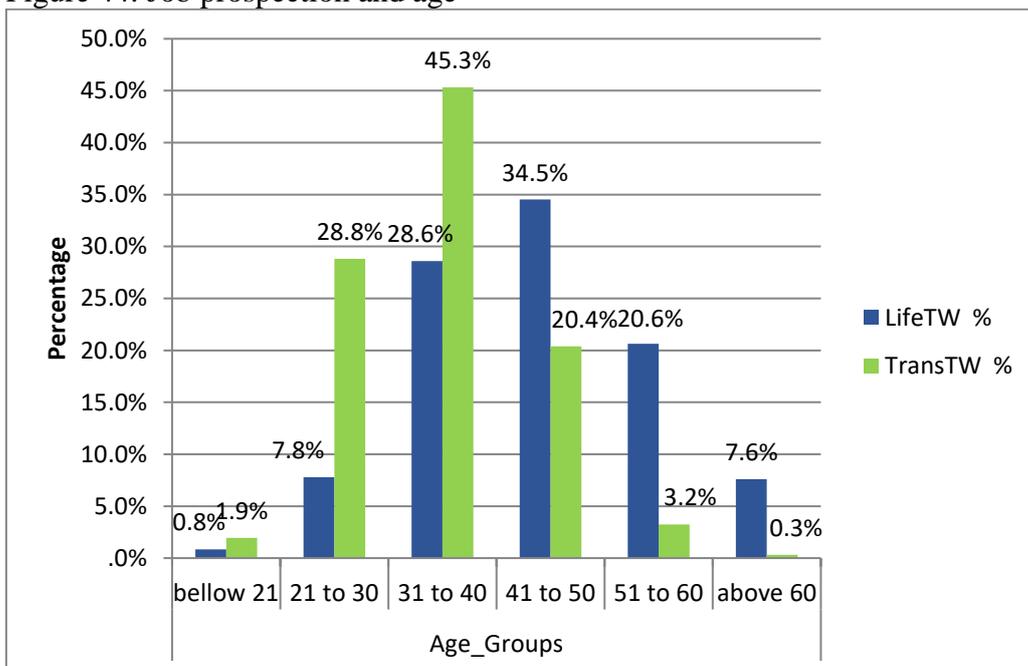
As shown in Figure 42, TW drivers can be divided into two groups according to their employment prospect: those who are willing to continue TW driving (LifeTW) and those who like to quit (TransTW). Almost 58% of the sampled population like to continue their job as three wheel drivers while rest of them, (42%) it is a great opportunity to address the issue of frictional unemployment and it is a good solution for their transition period. (Refer Figure 42)

Figure 43: Job Prospection



Source: NHRDC Three wheeler study 2017

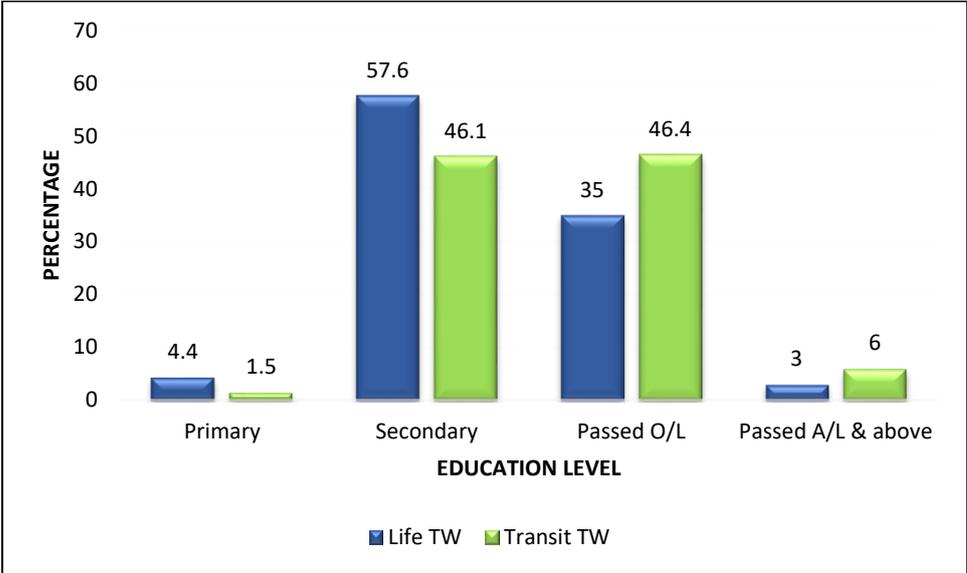
Figure 44: Job prospection and age



Source: NHRDC Three wheeler study 2017

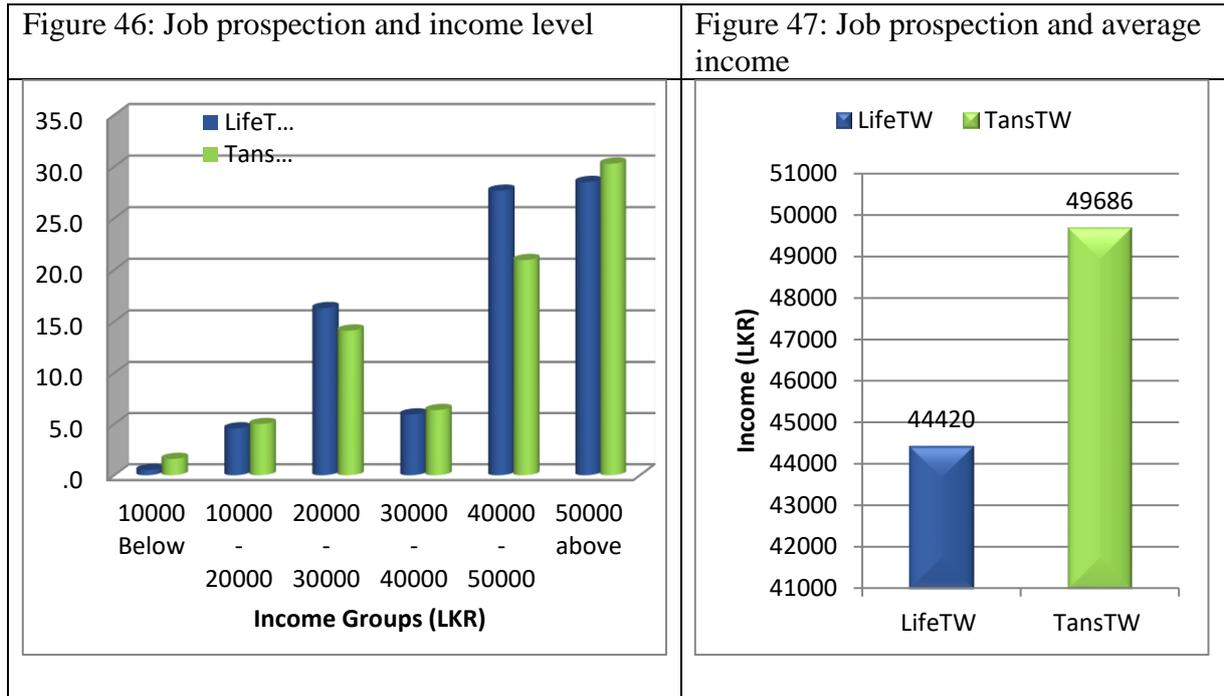
Figure 43 shows, TW drivers aged below 40 are more likely to change their livelihood into another field. Almost 45.3% of them are aged between 31 - 40. Accordingly, this age distribution depicts that younger people are more willing to change their job than seniors.

Figure 45: Job prospection and Level of education



Source: NHRDC Three wheeler study 2017

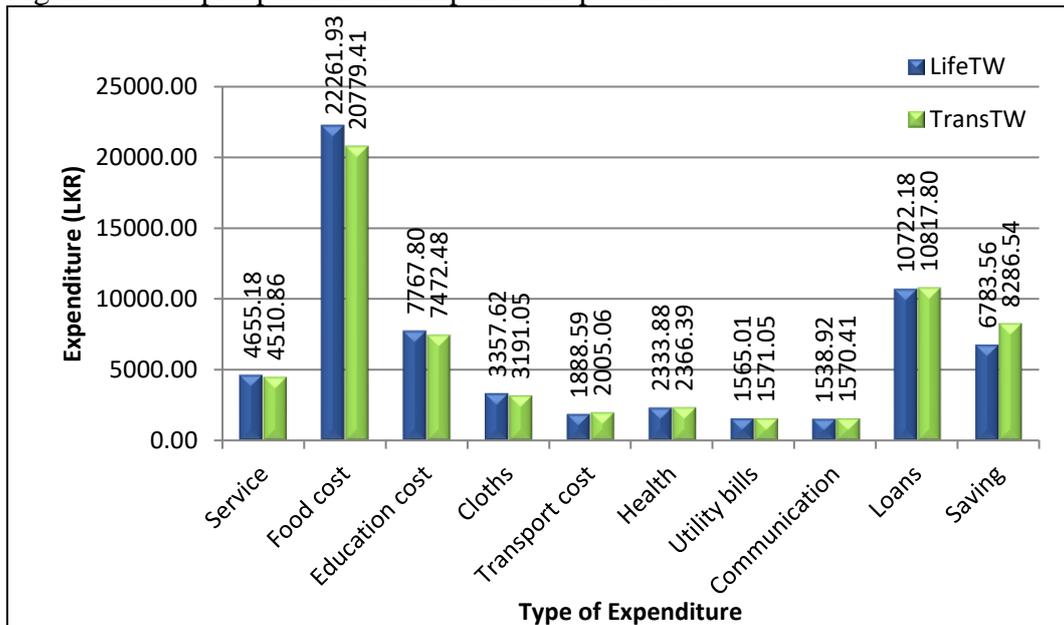
Passed O/L and above education categories are higher among Transit TW than Life TW. Secondary and less education categories are higher among Life TW than Transit TW. (Refer Figure 44).



Source: NHRDC Three wheeler study 2017

As shown in the left panel Figure 45, transit TW drivers record higher contribution in the lowest and also in the highest income group saying that there is no consistent income pattern across the distribution. However, compared to Life time TWs, the average income is quite high for Trans TWs. (Refer Figure 46)

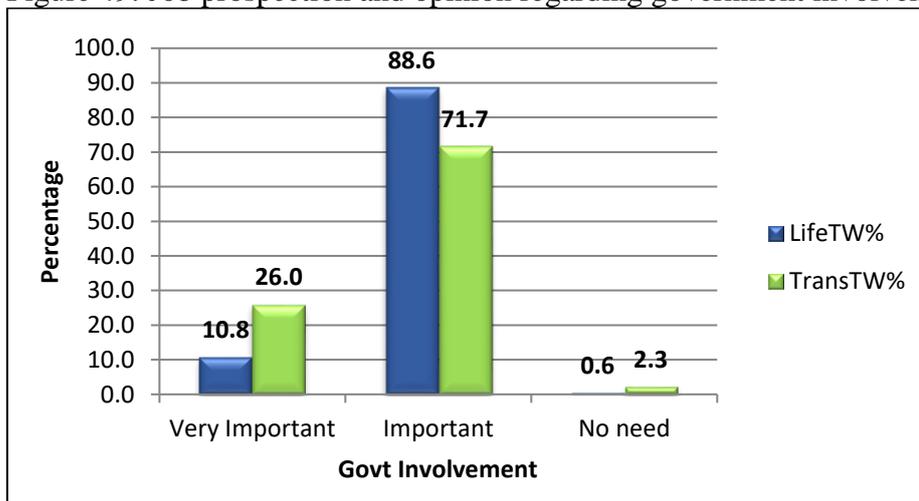
Figure 48: Job prospection and Expenditure pattern



Source: NHRDC Three wheeler study 2017

As shown in Figure 47, between groups difference of expenditure pattern of the sampled population is negligible. However, not surprisingly, saving is high among Trans TWs. As entrepreneurs, it seems that both groups do not satisfy even the lower order basic needs as explained by “Maslow’s hierarchy of needs” and hence, are at the bottom of the hierarchy.

Figure 49: Job prospection and opinion regarding government involvement



Source: NHRDC Three wheeler study 2017

Both groups admitted the need for government involvement. 99.5% of lifetime TW drivers and almost 98% of transTW expect a substantial contribution from the government/relevant authorities to upgrade their livelihood (Refer Figure 48).

Table 09 Job prospection and pessimistic views on Regulations

No	Regulation	LifeTW %	TransTW %
1	Uniform	50.3	49.7
2	Ticket	51.6	48.4
3	ID	64.2	35.8
4	Age limit	59.1	40.9
5	Meter	43.8	56.3
6	Park	42.4	57.6
7	Proper registration	48.9	51.1
8	Minimize TW	42.1	57.9

Source: NHRDC Three wheeler study 2017

According to the Table 09, lifeTW drivers are mostly against with the regulation no 1-4 while TransTW drivers are against with regulation no 5-8.

Considering all the regulations that are to be implemented in terms of the uniform, issuing a ticket, issuing an ID and Age limit the Life Time TW drivers are strongly oppose each category. This opposition might be due to the lack of awareness of the importance of each aspect which contributes to raise the quality of the entire system. Awareness should be created that the ID will be issued to enhance the level of security and explain that the reasons for the consideration of the age limit is mainly to utilize the productive young energy in other means and to minimize inefficient utilization of the young energy in the economy (Table 09).

Table 10: Job prospection and Misconducts

Habit	Frequency	LifeTW %	TransTW%
Alcohol	Never	61.4	38.6
	Use	47.5	52.5
Cigarettes	Never	59.7	40.3
	Use	51.3	48.7
Drink & drive	No	57.2	42.8
	Yes	65.6	44.4

Source: NHRDC Three wheeler study 2017

When studying the Table 10, it is clearly evident that misconduct is more popular among TransTW. The TransTW drivers hold a higher percentage of using Alcohol. But the LifeTW drivers are also frequently identified as smoking cigarettes and drinking and driving.

Initially it was found that 87% (Refer Figure 41) of the sample admitted that they do not drink and drive. From the rest 13%, around 44% of them belongs to TransTW group. In contrast, risky passenger transportation is quite high among LifeTW drivers.

Figure 50: Hire type

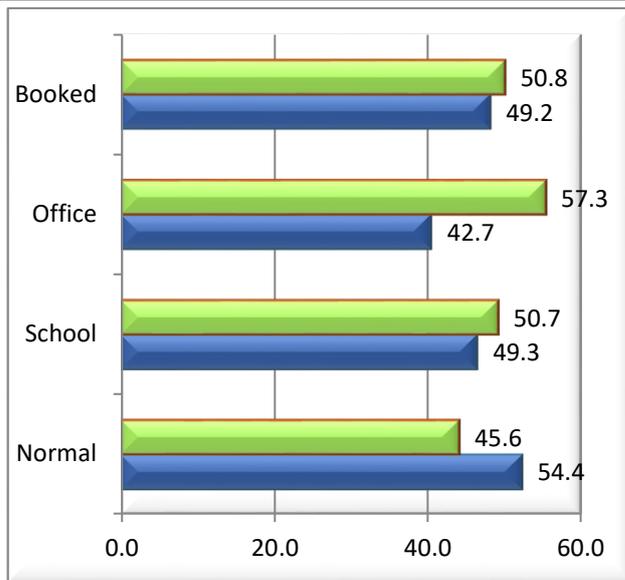
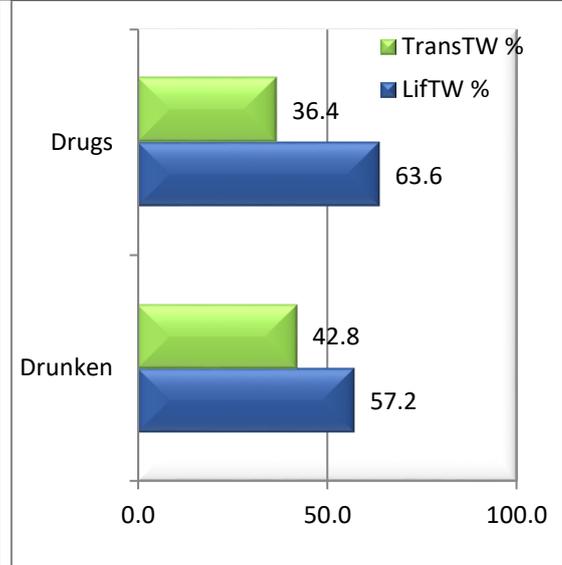


Figure 51: Risky passenger



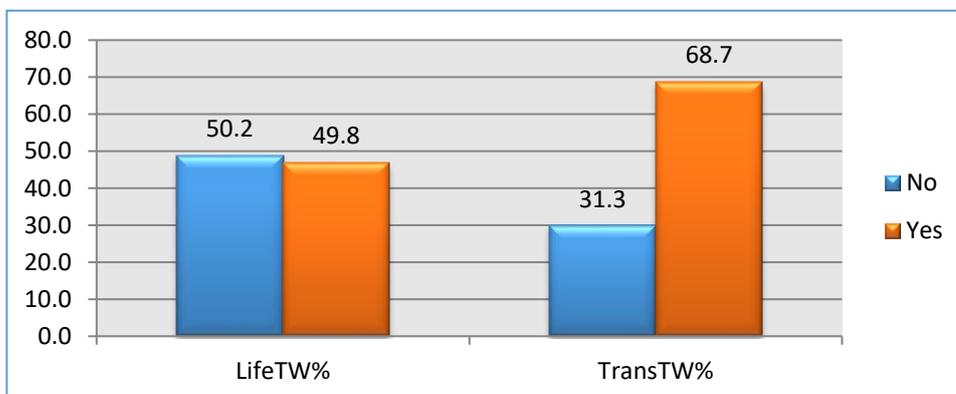
Source: NHRDC Three wheeler study 2017

This clearly indicates that the TransTW prefer regular stable hires (office & school) and less risky operations. Again, suggested self-employment, [as entrepreneurs] may be challenging for them because they seem reluctant to bear any risk. They have chosen stable income through regular hires.

**Training demand:**

As expected the majority of the sampled population has no trainings undergone. However, the majority who admitted that they need vocational training are TransTW group nearly 69% (Refer Figure 51).

Figure 52: Willingness of a vocational training



Source: NHRDC Three wheeler study 2017

## 05. Conclusion and Findings

### 5.1 Conclusion

This study was motivated by the recognition that TWs as a means of public transportation which not only affects society positively but also confine a considerable portion of the labor market to a single trade – three wheel transports - without a productive value addition to the economy. It has also generated numerous dire consequences. Currently, Sri Lanka faces an acute shortage of labour at skilled and semi-skilled levels. There are multifarious jobs in the construction, hospitality and tourism sectors creating employment opportunities for a lot of young energetic people. However, many young people who are under-employed as three-wheeler drivers not only waste their productive labor but also create a tendency for the youth to get addicted to a life of drugs and crime.

Hence, there is an urgent need of finding strategies to move the productive spirit of the country into better paying, low-stressed productive jobs which ultimately lessen the acute manpower shortages in booming sectors in the country. This study sought to provide policy makers and practitioners the background, rationale and the directions to address the issue effectively. Particularly, this report looked at the extent to which individual and household level demographic, socioeconomic characteristic as well as familial responsibilities were associated with respondent's occupational choice as TW driving. This may help to understand the sector and identify viable alternatives to redeploy them. Further, the factors that affect the probability of taking them out from TW driving were investigated in order to provide vital information to form prioritizing and targeting policies. Moreover, the best practices reviewed will shed light to establish the appropriate regulating body and the regulations to mitigate the negative externalities of the industry.

### 5.2 Overview of the findings

The study found that TW sector is responsible for significant negative externalities; traffic congestion, disorderly operations, unfair practices and accidents that harm public safety and welfare. Thus, the regulation of TW industry has the potential to deliver significant benefits for the society.

Where the age distribution of the sample is concerned, approximately 19 percent of the TW drivers are below 30 years of age and more than half of them are below 40 years.

The highest representation records from 31 to 40 age range. According to the findings, a little less than half of the TW drivers like to quit the job if there are viable alternatives. More than one-fourth of the Trans TW drivers aged below 30 years prove a great practical validity for prospected redeploying program. Further, the majority of drivers who like to quit is married, young males. This implies that redeploying programs should focus on the young and married people.

Education background showed that the majority has completed O/L but it is not sufficient to meet the formal labor market requirement for white collar jobs. Data clearly indicates the young who have excluded from the formal labor market due to the lack of opportunities for the lower belt, were involuntarily pulled into TW sector. In other words, it shows that they have been pushed into TW sector due to unemployment. However, the level of education of the potential group is comparatively higher for suitable vocational training. Thus, given the acceptable alternatives, this group has shown a possibility of redeploying.

Further, the education level of the majority of spouses is GCE (O/L) while the percentage that has had the education beyond GCE (O/L) is also relatively high. This data reveals that the adoptive capacity of spouses is high for TW drivers' livelihood changes. Provided that they are given necessary assistance, spouse can be the constant source of support to entrepreneurship activities.

The young who have been excluded from the formal sector has pulled into TW driving. The first and the foremost factor that has to be concerned in resolving the problem is an effective macro level policy to absorb this energetic labor into productive economic activities. Appropriate and timely demanded skills should be developed through participatory trainings. In this regard, the service or the contribution provided by national apprentice bodies is seriously questionable. It is timely to assess the productivity or employability of the trained from these government bodies before pumping public money into them for any activity.

This study found that TWs drivers earn a considerably higher level of income compared to other self-employed. This implies that their expected level of income from new job/self-employment may be high. They will change their TW job to another if and only if they have higher income than from TW. Further, according to the expressed income and expenditure data, a percentage of net negative earners is negligible as a whole. Even

though the number of negative net income earners is negligible as a whole, it is again quite high in the TransTW group. Hence, it should be stressed that the majority of TW drivers in this group have become better off not because of their TWs but because of other income sources. Thus, actions have to be taken to make them aware of the current gross income situation.

Where household expenditure is concerned, per head expenditure of a household is nearly LKR. 11,300. But when the mode is considered, the majority experience a per capita household expenditure of LKR. 10,000. This clearly implies that TW drivers are well above the poverty line (In 2016 OPL is LKR. 4166, DCS) proving that it is significantly contributes to reducing poverty in the country. That is to say, TW industry significantly contributes to reducing poverty in the country. Hence, actions have to be taken to improve loyalty and the quality of the service with necessary regulations.

For the vast majority, the main aspiration of being a TW driver is merely to feed the family and to earn a living out of it. Moreover, they spend more than 27.6% of earned income to fulfill basic needs (Food, Clothes & Health). This implies that they have not fulfilled the lower order basic needs as explained by “Maslow’s hierarchy of needs” and hence, are at the bottom of the hierarchy. Therefore, if any of the group is to move into an entrepreneurial culture it may require rigorous socio-cultural and economic upliftment.

Overall, the percentage of TW drivers who admitted that they use alcohol and/or cigarettes is quite high. Compared to LifeTW drivers, a vast majority of the TransTW drivers use alcohol as a habit. In contrast, risky passenger transportation is quite high among LifeTW drivers. Panel discussions revealed that TWs in any town are largely responsible for other types of misconduct: traffic congestion, disorderly operations, unfair practices and accidents that harm public safety and welfare. However, misconduct in TW sector cannot be taken separately. Especially, using TW drivers as information providers may work as an official link for them peeping into the underworld. Rules and regulations related to public transportation should be imposed on TWs strictly to maintain TW standards, quality and also service quality.

In another point of view, although misconduct is more popular among TransTWs, risky passenger transport is less in them. They have chosen a stable income through regular hires. This clearly indicates that the TransTWs prefer regular, stable and less risky

operations. Again, this suggested that entrepreneurship may be challenging for them because they seem reluctant to bear any risk. Thus entrepreneur culture should be developed beforehand any policy intervention.

The study found that the vast majority of TW drivers have bought TWs using leasing/loan facilities. This indicates that less restricted leasing facilities seemed to have boomed the TWs in the country on one side and created a considerable market for financial institutions on the other. This implies that there is a need for a viable strategy to earn sufficient money to pay leasing/loan installments even under redeployment. Effectiveness of the alternative would depend critically on the income earned.

Although more than 75 percent of TW drivers have fixed meters in their TWs, widely practiced pricing strategy is “driver driven”. This brings a point to rethink the effectiveness of fixing meters. The conflict between the practice of the regulation (meter fixing) and the actual behavior implies that there is a gap between implementation and effectiveness of newly imposed regulations. It seems that TW drivers have fixed meters merely as an escaping strategy. Further, the public trust on the meter function keeps deteriorating. This demands an effective regulatory body to monitor the sector and fare regulations.

It was clearly shown that a perfectly competitive TW market has been converted into an oligopoly partly because of imperfect or information asymmetry and partly because of park registration. It was confirmed that the majority function by parking the vehicle at registered parks. Centralized -in the form of government semi-government or private-intermediating centre they can act to minimize the information gaps reducing transaction cost and also increasing consumer welfare (formulating a fare index, displaying per km price in the vehicle, informing the starting price and per km price at the time of online booking, rating TW taxies according to customer/society friendly service status are some of the best practices in the world). Further, the best practices (training, knowledge, awareness, age, advance driving experience etc) which suits the given locality can be adopted as entry qualifications into the industry rather than using ‘park registration’.

The biggest advantage of the emergence of TWs is the flexible working hours which has allowed the TW drivers to attend to their job freely. Also, the chance to support the family

is adequately provided. Other than these, this job serves as a good source of income, a source to make new friends and also a very effective method of networking.

Lack of social acceptability, income and job security are the major issues faced by the TW drivers. At the moment, TW drivers are also 'marginalized' when the social acceptance or attitudes towards them are concerned. According to the academic literature and also public experience, TW drivers themselves are mostly responsible for the current pathetic situation. There is no short term action to resolve the issue but the development of the industry as a profession would eventually adjust the public mindset. However, awareness campaigns in public forums on the matter and active media campaigns may be very helpful in changing the mindset and attitudes.

TW taxies put no burden on government budget and it is a vital means of transport of the poor. Hence, an appropriate social security network should be established. Further, the formation of centralized intermediary would be helpful in minimizing the common disadvantages related to the informal sector and thereby to TW sector as well.

According to the study findings, almost everyone in the field agrees with the government efforts to enhance the lifestyles of the TW drivers. They believe that providing sufficient support to them is quite important. However, the demands showed that their expectations (knowingly or not) have been aligned to protect their market power. On the whole, it was clearly found that TW industry likes to keep and increase their market power constantly. This constant effort of TW industry in maintaining and increasing the market power signals the need of applying appropriate fare regulations so that the heterogeneity could be minimized.

It was found that the majority just agree with all the rules and regulations proposed by the government: minimum age, identity card, uniform, and receipt to the passenger. This implies that they would probably not oppose the policies that there are no costs imposed on them. Furthermore, it was found that the majority of frictional TW drivers like regulations while they do not like restrictions. The majority of lifetime TW drivers like restrictions. However, they are completely unaware of the need, importance and possible benefits of such implementations. Hence, the effectiveness of the policies completely depends on the power of the intermediary. Then the common practice; for the sake of doing, would be applied. A good example can be found from the private bus industry where drivers and conductors wear uniforms. Further, there is a risk of politicizing the

regulations stressing the negatives by one party and positives by another. Thus it is mandatory to pass the complete information on impact of such policies on developing TW taxi service as an accepted profession.

The present study seeks to examine the covariates of TW driver's occupational choice probability to answer the question: what are the factors that influence TW drivers to choose an alternative livelihood strategy?" Firstly, it was found that the preference of being employed in another trade is positively related to the level of education: the more educated, are more likely to quit. Respondents who have used their own money to buy TW, are more likely to quit while the respondents who bought TW by using loans or leasing have less likelihood of changing TW driving into another. Respondents who have a considerable number of regular trips like school/ office hires, have low probability of quitting from TW job. Cultural capital is said to be critical in shaping an individual's behavior and decision making process. Those who have improved and updated contemporary knowledge would have high adaptability. TW drivers who spend their waiting time by reading newspapers are more likely to give up TW job.

More rigorous studies should be done in order to find whether there is an excessive TW service/service providers and an unequal distribution of TW has shown it as excessive. Especially, if inequality is a problem, the rural poor (more than 70% of the population in the country) would be badly affected by macro level constraints on the industry. This is mainly because TWs provide a modern and attractive employment option for the rural people, as well as high returns for people who lease them out. TW also provide vital mobility on rural roads that lack conventional transport services (even for transporting goods, access to maternal healthcare and transport for people with disabilities). Therefore, disaggregated level (or region specific) policy implementations would be more appealing.

Further, it should be clarified whether the issues come from the number of TWs or from the driver specific reasons (driving experience, habits, knowledge, awareness, attitude etc.). Specifically, listening to the customers, understanding and the maintaining of patience (even among the national leaders of the industry) are critical in TW industry to develop it as a profession. Driver related factors may be controlled by developing TW taxi service as a profession. Driver related factors may be controlled by developing TW taxi service as a profession. They would be trained to maintain the profession. TW drivers should be tracked through comprehensive (internship) and follow up trainings. For

instance, selected persons can give internship training in a best practiced environment (foreign country).

As pointed out in the study, the main drivers of TW choice were unemployment and ease. Then the biggest advantage of the emergence of TWs is the flexible working hours which has allowed the TW drivers to attend to their job freely. Hence, some of the factors that need to be concerned when redeploying them are the level of education; level of TW income; freedom, flexi working hours and family support. Incorporating these factors into any empowerment program would be very challenging but neglecting them would undermine the validity of such endeavors.

## 6. Recommendations

The foremost factor that has to be concerned in resolving the problem is an effective macro level policy to absorb this energetic labor into productive economic activities.

Appropriate and timely demanded skills for TW drivers should be developed through participatory trainings.

There is a lack of empowerment programs available for them which showed that the empowerment programs should focus on young and married people in this industry.

Providing them necessary assistances, the spouses can be the constant source of support to entrepreneurship activities.

Develop a mechanism for public trust on the meter function which keeps deteriorating and this demands an effective regulatory body to monitor the sector and fare regulations.

Centralized -in the form of government semi-government or private- intermediating center a unit can act to minimize the information gaps reducing transaction cost and also increasing consumer welfare (formulating a fare index, displaying per km price in the vehicle, informing the starting price and per km price at the time of on line booking, rating TW taxies according to customer/society friendly service status are some of the best practices in the world).

Best practices (training, knowledge, awareness, age, advance driving experience etc) which suits the given locality must be adopted as entry qualifications into the industry rather than using 'park registration'.

Policy level actions have to be taken not to stop but to improve loyalty and the quality of the service with necessary regulations.

This industry has to be regularized to provide a modern and attractive employment option for the rural people, as well as high returns for people who lease them out.

Specifically, listening to the customers, understanding and the maintaining of patient (even among the national leaders of the industry) are helpful to the TW industry to develop as a profession and driver related factors must be controlled by developing TW taxi service as a profession.

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## Annexure I

### Three- Wheeler Drivers Thoughts

- 3wheel companies such as Budget Taxi, Fair Taxi should be limited
- Add new rules to 3-wheel drivers like maximum speed, max number of seating
- All the three wheelers should register
- Awareness about traffic rules
- Conduct training programme for financial Programme
- Doing some Awareness programme
- Establishing discipline
- Give licenses who older than age 25
- Good recognition
- Government should give their attention to low income 3wheel drivers
- If meter is going to be essential part, it should be supply reasonable price
- Involvement of Some government officers such as Police and NHSL in to 3wheel driving
- Loan schemes.
- Make job opportunities to youth to
- Need to excuse for 4 passengers
- Need to stop other province people
- Need to up speed limit in rural areas
- Other province people after 10.00 pm
- price of spare parts should be reduced
- Proper registration and pension salary
- Providing loan facilities
- Providing spare part at lower prices
- Reduce the cost

- Reduce the outsider 3wheel drivers
- Reduce the spare parts and fuel price.
- Reduce the spare parts price, Introduce the pension scheme. Create the part time jobs
- Reduction the rules of 3wheels
- Restriction for government officers to do the three wheels (Army, Navy)

## Annexure II

Table 1 – Job Aspiration, Second preference

	Percent	Cumulative Percent
Valid		
Buy a Vehicle	2.2	2.2
Go abroad	1.0	3.2
Start a Business	4.4	7.6
For living	61.3	68.9
For family	31.1	100.0
Total	100.0	
Total		

Table 2 - Job Aspiration , Third preference

	Valid Percent	Cumulative Percent
Valid		
Buy a Vehicle	10.0	10.0
Start a Business	10.0	20.0
For living	33.3	53.3
For Brothers/Sisters	5.0	58.3
For family	41.7	100.0
Total	100.0	
Missing		
System		
Total		

Table 3 – Chi square Tabulation

Edu_level_new * Transit_or_Not Crosstabulation					
			Transit_or_Not		Total
			Life TW	Transit TW	
Edu_level_new	Primary	Count	25	6	31
		% within Transit_or_Not	4.2%	1.4%	3.0%
	Secondary	Count	327	179	506
		% within Transit_or_Not	55.3%	41.9%	49.7%
	Passed O/L	Count	199	180	379
		% within Transit_or_Not	33.7%	42.2%	37.2%
	Passed A/L & Above	Count	40	62	102
		% within Transit_or_Not	6.8%	14.5%	10.0%
	Total	Count	591	427	1018
		% within Transit_or_Not	100.0%	100.0%	100.0%

Table 4 – Chi Square Test

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	35.122 <sup>a</sup>	3	.000
Likelihood Ratio	35.640	3	.000
Linear-by-Linear Association	34.940	1	.000
N of Valid Cases	1018		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 13.00.