



## IMPLEMENTATION OF COMPLETE OR PARTIAL FARE-FREE PUBLIC TRANSPORT (FFPT) CONCEPT CAN REDUCE MORBIDITY AND MORTALITY ASSOCIATED WITH NEUROSURGICAL CONDITIONS - HYPOTHESIS

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### ABSTRACT

**Background:** The Chief Minister of Tamil Nadu has issued an executive order that permitted free travel for (1) women (2) differentially abled persons (3) ITI Students in the town (local) buses owned and run by Tamil Nadu State Transport Corporation (TNSTC). This paper traces the history of initiatives by Dravidian Governments in (a) Making Transport Facilities Available, Accessible and Affordable for all parts of society irrespective of Location, Economic Status, Social Status and Gender (b) Women Education, Employment, Entrepreneurship, Empowerment, Health, and Social Security and proposes a hypothesis on the potential Health and Economic Benefits of the recent announcements.

**Materials and Methods:** Literature Review and Analysis of the impact of the recent announcement.

#### Results and Conclusions:

1. Successive Dravidian Governments in the state of Tamil Nadu have implemented various schemes to ensure that Transport Facilities are Available, Accessible, and Affordable for all parts of society irrespective of Location, Economic Status, Social Status, and Gender, and these schemes have also made a tremendous impact on improving Gender Equality, Social Equality and Augmenting the GDP and Economics.
2. Successive Dravidian Governments in the state of Tamil Nadu have implemented various schemes regarding Women's Women Education, Employment, Entrepreneurship, Empowerment, Health, and Social Security.
3. In addition to building upon the above two achievements, the current announcement is also likely to ensure various benefits like:
  - a. Reduction in Medical Expenses due to reduced mortality and morbidity of certain illnesses of the brain and spine.
  - b. Reduction in Sickness Absenteeism due to reduced mortality and morbidity of certain illnesses of brain and spine.
  - c. Reduction in Disability Adjusted Life Years due to reduced mortality and morbidity of certain illnesses of brain and spine.
  - d. Increase in Cost Savings by Public.
  - e. Increase in Education and Employment of Women
  - f. Increase in GDP
  - g. Increase in Profit of Private Bus Companies.
  - h. Increase Tax Revenue to Government.
  - i. Increase Foreign Exchange Reserves.
  - j. Increase Value of Rupee.

**KEYWORDS :** Head Injury, Cervical Spondylosis, Lumbar Spondylosis, Free Bus Transport, Fare-free public transport, FFPT, Dravidian Governance, TamilNadu, MK Stalin

### 1. INTRODUCTION

Fare-Free Public Transport (FFPT) is a well-known and adequately studied<sup>1</sup> concept. The Objectives and Alternatives<sup>2</sup> have been discussed<sup>3</sup>. There have been peer-reviewed studies from Tallinn (Estonia)<sup>4</sup>, Santiago (Chile)<sup>5</sup>. The Effects of the Selective Enlargement of Fare-Free Public Transport<sup>6</sup> and the Frydek-Mistek (Czechia)<sup>7</sup> experience have also been published. Free fare policy as a tool for sustainable development<sup>8</sup> of public transport services as well as the comparison between FFPT and Private Cars<sup>9</sup> are also well known. Kansas City has become the first major U.S. city to make all public transportation free<sup>10</sup>.

Immediately after Swearing in and taking charge, Thiru.Muthuvelar Karunanidhi Stalin<sup>11,12</sup>, the Chief Minister of Tamil Nadu<sup>13</sup> had issued 5 orders<sup>14</sup>.

1. Rs 4,000 will be immediately provided to all 'Rice' ration cardholders in the state to provide them some relief amidst the pandemic. Of the Rs 4,000, Rs 2,000 will be distributed in May and the remaining will be given later.
2. The price of Aavin milk is to be reduced by Rs 3 as a relief measure for residents, as promised by the DMK in its manifesto.
3. All women, including working professionals and students, can travel in state-owned buses (Ordinary fare) for free from Saturday. The extra cost of Rs 1,200 crore incurred due to this will be borne by the state government.

4. A new department to fulfill the promise of addressing all complaints in the first 100 days of the DMK government will be formed.
5. The expenses for COVID treatment in private hospitals will be covered under the Chief Minister's health insurance scheme and will be reimbursed to the hospitals by the government.

One of the five was an executive order (Tamil Nadu Free Bus Travel - TNFBT) which permitted free travel for women in the town (local) buses owned and run by Tamil Nadu State Transport Corporation (TNSTC) which is wholly owned by the Government of Tamil Nadu. This order must be seen in continuity with the achievements of Dravidian Governments in (a) Making Transport Facilities Available, Accessible, and Affordable for all parts of society irrespective of Location, Economic Status, Social Status, and Gender (b) Initiating and implementing specific and well thought out schemes for Women Education, Employment, Entrepreneurship, Empowerment, Health, and Social Security. This paper traces the history of initiatives, their impacts and proposes a hypothesis on the potential Health and Economic Benefits of the recent announcement.

### 2. Making Transport Available, Accessible and Affordable

Successive Dravidian Governments in the state of Tamil Nadu have implemented various schemes to ensure that Transport

Facilities are Available, Accessible, and Affordable for all parts of society irrespective of Location, Economic Status, Social Status, and Gender, and these schemes have also made a tremendous impact on improving Gender Equality, Social Equality and Augmenting the GDP and Economics.

In 1971, the Tamil Nadu Fleet Operators Stage Carriages (Acquisition) Act<sup>15</sup> was enacted by which all the routes, buses, workshops, and the staff of the five fleet operators owning 50 permits and above were acquired and transferred to three Transport Corporations viz. Pandiyan Roadways Corporation, Cheran Transport Corporation, and Cholan Roadways Corporation. Subsequently, in 1973, the Government passed the Tamil Nadu Stage Carriages and Contract Carriages (Acquisition) Act, 1973. The Act provided for the nationalisation of passenger transport District by District, in a period of five years starting from the district, which had the smallest fleet and progressing in the ascending order of fleet strength of the districts. The first District to be fully nationalised under this Act was The Nilgiris.

The advantages of a state-run transport corporation are far and wide. To begin with, the cost was kept under control without undue profiteering. Small towns and villages were connected on the road map. The District Collector was able to regulate the number of trips and the various stops based on the requests received in the petitions to the collector. In a single step, the transport became available, accessible, and affordable.

TNSTC transport about 17 million people every day<sup>16</sup>. More than 60% of public urban transport buses operated in India are in South India with a significant share from Tamil Nadu. TNSTC buses have the lowest fares with the highest fleet utilization and good network coverage in India.

The Minibus Scheme initiated in 1996 brought more areas under coverage and was a welcome move. The Free Bus Pass for School Students can be regarded as the first attempt at Fare-Free Public Transport (FFPT), and it was a roaring success. Bicycles were also given to School students which led to a marked improvement in GER.

### **3. Women Education, Employment, Entrepreneurship, Empowerment, Health, and Social Security**

Successive Dravidian Governments in the state of Tamil Nadu have implemented various schemes regarding Women Education, Employment, Entrepreneurship, Empowerment, Health, and Social Security

#### **3.1 Women Education:**

Exclusive schools were started for Girls. Education, Books, Notes, Noon Meal, School Bag, Sanitary Napkins, Bicycles, Slippers, Bus Pass (FFPT), Atlas, Dictionary, Geometry Box were all given Free. In 1989, Moovalur Ramamirtham Amma memorial Scheme was introduced and Rs 5000 was given as Assistance for Marriage for women if they completed the 8<sup>th</sup> Standard. In 1996, Rs 10000 was given if the Girl had completed the 10<sup>th</sup> Standard. This was subsequently increased to Rs 15000 in 2006, Rs 20000 in 2008, and Rs 25000 in 2010. One of the common causes of discontinuation of girl education was puberty. However, this scheme enticed the parent to continue the education till 10<sup>th</sup> and once the girl gets good marks in 10<sup>th</sup>, the parents are again convinced by the teachers to make the girl study till 12<sup>th</sup>. A Free Laptop at this stage went a long way in tilting the parents' decision towards continuing the girl child's education. After completing 12<sup>th</sup> Standard (Higher Secondary) the girls had the option to pursue professional courses or enroll in Women's only Arts and Science College named after Rani Anna started in Rural Areas in the 1970s. Those from Rural Areas Got Monetary Support for their Graduation and Post-Graduation through

EVR Nagammaiyar Memorial Scheme introduced in 1989.

#### **3.2 Women Employment:**

In 1972 a scheme was introduced where women were appointed under apprenticeship in various government offices and were subsequently regularized by Tamil Nadu Public Service Commission. Women were appointed into Police Force first in India in 1973 in Tamil Nadu. 30 % reservation for Women in Government Jobs introduced in 1990. Girls / Women were given Free Bicycle / Two-Wheeler Training by the District Administration in the 1990s to enable them not dependent on their father/brothers for going to school and college. Only Women have been appointed as Teachers till the 2<sup>nd</sup> Standard from 1997. Women-only Special TNPSC exams have been conducted to recruit more women into the workforce. Pilot Training for Girls from SC Community under a cost of Rs 1 Crore initiated in 2009. It is poetic that there is a government that spends money to train a girl to ride a bicycle and train her to fly a plane.

#### **3.3. Women Entrepreneurship:**

Free Sewing machine was given to Widows and Deserted Woman from 1975. A self-help group for women was started in 1989 in Dharmapuri and later was expanded all over the state. Microfinancing for Women was introduced in 1989. 10 % Allotment for Women in Industrial Estates.

#### **3.4 Women Empowerment:**

The Hindu Succession (Tamil Nadu Amendment) Act, introduced as early as 1989, enabled women to inherit<sup>17</sup> equal share from Ancestral properties. 33 percent Reservation for women in Local Bodies is in force since 1996. It was mandated to have at least a woman in Temple Administrative Committee

#### **3.5 Women's health:**

24-hour PHCs set up for Continuous Maternity Care of Women. To allow the woman to have adequate rest and not overstrain herself during pregnancy and early nursing period, Dr. Muthu Lakshmi Reddy Maternity Benefit Scheme was introduced in 1989. At present Now Rs 18000 is given for each pregnancy. Free Gas Stoves drastically reduced the respiratory diseases associated with faggot stoves. Free Color TV enabled them to be in touch with the world.

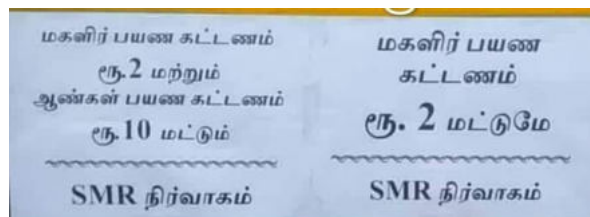
#### **3.6 Social Security for Women**

The Marriage assistance schemes have been discussed above. Free Sewing machine was given to Widows and Deserted Woman from 1975. They were eligible for pension even after their son crossed 18 years. Dr. Darmaambaal's memorial widow Remarriage scheme was initiated in 1975. Anjugam Ammal memorial Scheme for Intercaste Marriage. Mother Teresa Scheme for Marriage Assistance of Deserted Women. Rs 25000 as Marriage Assistance under EVR Maniyammai memorial scheme for daughters of widows were other schemes. An unmarried woman who is more than 50 years gets Rs 500 as assistance. 1 kg Rice at Rs 1 enabled them to have meals and not being in hunger.

#### **4. Tamil Nadu Free Bus Transport Scheme (TNFBT)**

The State-Run TNSTC operates over 9,000 buses<sup>18</sup> across the State. These are classified as Ordinary, Express, Deluxe, Air-Conditioned Buses. Around 5600 Buses<sup>19</sup> fall under Ordinary Category and these buses will halt at all stops and these 5600 are made available free of cost to women, transgender and differentially abled. This is expected to cost around Rs 1200 Crores per year but is expected to incur huge savings to working women. The Order came into effect on the same day, and notices went up in the buses immediately ensuring that the scheme has been implemented. Subsequently, Government ITI (Industrial Training Institute) students were allowed to travel on Transport Corporation buses free of charge throughout the month with identity cards and uniforms<sup>20</sup>.

The above order won nationwide accolades<sup>21</sup> was followed with another order extending the TNFBT to differently-abled<sup>22</sup> and transwoman<sup>23</sup>. However, certain unexpected developments also followed. Few Private Bus Operators, like SMR Transports<sup>24</sup> of Namakkal<sup>25</sup> reduced the ticket cost for women in their buses.



The earlier ticket charges of Rs 10 for everyone were modified as Rs 10 for Men and Rs 2 for Women. Though there was no government mandate to reduce or waive off ticket costs, the management proactively reduced the cost. At first glance, this would look like a loss-making option for the management. But an in-depth analysis reveals that it is a smart move by the management, and we will discuss this concept in detail.

Let us assume that a husband and wife had to travel to the nearby town from the village for some work. Earlier, they need to spend Rs 40 if they go by TNSTC Bus or by Private Bus. But after the introduction of FFPT for Women, the scenario changes, and their travel in Private Bus costs them Rs 40, while a trip in TNSTC Bus would cost them Rs 20 alone. Hence, many families would skip the private bus and wait for the TNSTC bus and use that. When the Private Bus has reduced the ticket cost for women from Rs 10 to Rs 2, the cost difference between the two has narrowed down from Rs 20 to Rs 4. In this scenario, they are likely to use the private bus if that departs first instead of waiting for the TNSTC bus and use the TNSTC bus if it departs first.

Cost of Travel	TNSTC Bus	Private Bus	Likely to Choose
Till 6 <sup>th</sup> May 2021	Rs 40	Rs 40	Whichever departs first
After FFPT for Women	Rs 20	Rs 40	Government Bus
After Price Reduction by Private Bus Company	Rs 20	Rs 24	Whichever departs first

The next point to be noted is, with this reduction, the cost of traveling by bus has become much cheaper than the cost of traveling by two-wheelers and hence this move is likely to bring in a large chunk of erstwhile two-wheeler travelers into the public transport system. This will in turn increase the revenues of both state and private-run transport services.

## 5. Potential Benefits

The scheme is less than three months old. It is too early to know the actual benefits and takes data-driven decisions. The authors propose a hypothesis that this scheme may have far-reaching and even unintended and unexpected benefits like below and all these can be confirmed by analysis of relevant data after a couple of years. Of the below 9 benefits, the first would be a direct benefit and the remaining indirect benefits.

### 5.1. Reduction in Medical Expenses due to reduced mortality and morbidity of certain illnesses of the brain and spine.

Road traffic accidents remain the main cause of Head Injury (traumatic brain injury (TBI)). Approximately 90% of the world's road fatalities occur in the setting of Low- and Middle-Income Countries like India, although they only have half of the world's vehicles. This is because of the **proportionately higher number of transports using two-wheelers in our country**. According to the most recent global burden of traumatic brain injury (TBI) study, over a fifth of the world's head injuries occur in India.<sup>26</sup> India has the rather unenviable distinction of having the highest rate of head injury in the world (5.6M cases per year out of 27.1M cases globally). In

addition, Head Injuries are the leading cause of death and disability within trauma.<sup>27,28</sup> In addition to Injuries due to Accidents, Prolonged travel by two-wheelers also predisposes to conditions like Cervical Spondylosis and Lumbar Spondylosis causing neck pain and back pain. **The Medical Expenses associated with these conditions are directly proportional to the use of two-wheelers for transport. Any intervention which reduces the use of two-wheelers and promotes travel by other means will reduce the mortality and morbidity associated with these conditions.**

### 5.2. Reduction in Sickness Absenteeism due to reduced mortality and morbidity of certain illnesses of brain and spine.

Sickness Absenteeism due to the above conditions would significantly reduce when people reduce the usage of two-wheelers and embrace public transport.

### 5.3. Reduction in Disability Adjusted Life Years due to reduced mortality and morbidity of certain illnesses of brain and spine.

Disability Adjusted Life Years (DALY) due to the above conditions would significantly reduce when people reduce the usage of two-wheelers and embrace public transport.

### 5.4. Increase in Cost Savings by Public.

It is proposed that the scheme will have a direct impact on cost savings as discussed above.

### 5.5. Increase in Education and Employment of Women.

Free Travel would lead to an increase in Education and Employment of Women

### 5.6. Increase in GDP.

Empowerment of Women will eventually lead to an increase in the working force and an increase in Gross Domestic Product (GDP)

### 5.7. Increase in Profit of Private Bus Companies.

It is proposed that this scheme will induce many people to shift the mode of transport from two-wheelers and even four-wheelers to public transport and this will indirectly increase the profit of Private Bus Companies.

### 5.8. Increase Tax Revenue to Government.

It is proposed that this scheme will empower women and increase women's employment and hence increased tax revenue to the government.

### 5.9. Increase Foreign Exchange Reserves.

It is proposed that the reduction in the use of two-wheelers will lead to reduced demands for petrol and diesel and in turn reduced demand for crude oil which will bolster the foreign exchange reserved.

### 5.10. Increase Value of Rupee.

Reduced Demand for Crude will increase the value of the Rupee.

## 6. CONCLUSION

1. Successive Dravidian Governments in the state of Tamil Nadu have implemented various schemes to ensure that Transport Facilities are Available, Accessible, and Affordable for all parts of society irrespective of Location, Economic Status, Social Status, and Gender, and these schemes have also made a tremendous impact on improving Gender Equality, Social Equality and Augmenting the GDP and Economics.
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### Conflict of Interests

None

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