

# IMPACT OF SIMPLE UNRELIABLE TECHNOLOGY IN TRANSPORT: A STUDY ON THE BATTERY DRIVEN RICKSHAWS IN SYLHET CITY

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## ABSTRACT

*There is a dire need to introduce technology in manual rickshaws in Bangladesh for a long period as this vehicle is contributing more in transport sector and created a huge employment opportunities in Bangladesh but termed as inhumane and sign of underdevelopment. Newly introduced motorized rickshaws reduced the physical efforts and increase speed but create some complexities in technical and legal aspects. The main objective of the paper is to study the impact of simple unreliable technology introduced in battery driven rickshaw. For this descriptive-analytical research 300 rickshaw pullers are selected on the basis of random probabilistic sampling for primary data and the secondary data were collected from published books, research journal, magazine, newspapers etc. Data were analyzed by SPSS19 to find out frequencies and percentiles to interpret the data. It is found that in spite of introducing speed and reducing manual efforts to drive that green vehicle, absence of legal framework and unreliability of simple technology the rickshaw pullers are harassed frequently both financially and physically. Introducing laws for that vehicle, improving the technology to provide security to rickshaw pullers and passengers can remove the allegation against that type of green vehicles.*

**Keywords:** *Battery Driven Rickshaws, Unreliable Simple Technology, Financial & Physical Harassment, Green vehicle.*

### Introduction:

A rickshaw is a three-wheeled cart that is pulled by a human to transport people from one place to another place which seats one or two persons. It is available in Asia for carrying passengers pulled by a man or drive by man who sit in front site. Two types of employments are created by rickshaws: i. Direct and ii. Indirect. The rickshaw pullers and the owners are directly employed by rickshaws. The workshops for repairing rickshaws, the sellers of spare parts all the employed by rickshaws. The family members of all the parties are getting their livelihoods by the

rickshaws. This is the easiest employment opportunities of all common people of Bangladesh and even some literate unemployed people are maintaining their and their family members' lives from the earning from rickshaw pulling and owing. Some financially weak students are also earning money from this easy employment opportunity and maintaining their cost of studying and also their cost of living. The vast people of Bangladesh are depended on the rickshaws for their transport. In every area, either paved or unpaved, rickshaws are transporting people especially the middle income and lower income people. And thus rickshaws are adding a great

value in the transport sector. Varieties types of rickshaws are found in different cities of Bangladesh and west Bengals. Rickshaw van is one of the types used for carrying goods in small lots and also 6-8 peoples at time. DC motors, gears and battery added different versions of speedy rickshaws are added recently, named by Nosimon, Korimon, Easy bikes, popularly known as 'tom tom' to carry 6-8 peoples at a time with less manual efforts. Newly added a version of motorized rickshaws is motor and battery added rickshaws with same design of paddle rickshaws. These types of rickshaws are increasing rapidly.

For any new product the operational efficiency, cost and pricing, marketing, legal & social supports & technical aspects are to be considered. The most expected speed with less effort is achieved by this vehicle as the normal speed of this vehicle is 25-30 km per hour that is optimum for city area. The rickshaw pullers get the motorized speed and their manual efforts are saved for drive in longer duration of a day. Cost regarding the daily rent to the owner is higher that leads to charge 100% more than the paddle rickshaws (field survey). But the passengers accept that price as they are getting speed and can save their time from allocation in transport. The availability of that option in the road paved the way of marketing of that vehicle. The passengers are getting the product in front of them and selecting that option if they need. In the absence of legal framework to give the necessary permission of the product create problems for that modified product. The technology of that vehicle is not getting the support of the concerned persons and experts and termed as unreliable that creates limitations in widespread use of that product. These limitations are to be checked to analyze the problems by comparing with the prospects of that modified product.

#### **Review of Literature:**

Rickshaws are creating employment of around 1 million people (Gallanger, 1992) and around 3 million people are depending on the income of rickshaws (Banglapedia, 1998). Gllanger observed in 1992 that one-third of the total value added by transport sector is contributed by rickshaws but in 1998 it becomes 55% (Banglapedia, 1998). Rickshaws are termed as inefficient, inhume and a symbol of underdeveloped by rich peoples (Gallanger, 1992) and want to replace by motor vehicles. In the absence of legal support, rickshaw puller faces harassments by police and political leader who are taking tolls from battery driven rickshaw puller and owner of rickshaw regularly. According to Motor Vehicle Act 1983, only BRTC (Bangladesh Roads and Transport Corporation) can give approval to all types of motor vehicles to drive in road. But BRTC did not permit to battery driven rickshaws in Bangladesh due to the

classification problem. City Corporation decided to give this approval but it was not materialized. Due to lack of proper laws, the modification of rickshaws is not properly supported by the concerned authorities and facing barriers from legal and social environment of Bangladesh. A new product must get the support of the legal and social structure of the country and also technical aspects of the products must be acceptable to the users and the concerned experts. In the case of any vehicles, the safety, speed, cost and service are the main factors to be. In the case of battery driven rickshaws, these aspects must be examined. As this modification was expected by all people of Bangladesh because of the allegations against peddle rickshaws as slow, inhume, inefficient and simple of underdevelopment. The opinion of the rickshaw pullers may be considered in this regard. Police & leaders are taking Tk. 800 per month as toll from those vehicles (Abdullah Nooh, 2013). The main advantage of battery driven rickshaw is speed and saving manual work of paddle rickshaw puller. Average speed of such vehicles is 20-30 km per hour (Abdullah Nooh, 2013). The main disadvantage of battery driven rickshaw is costlier than manual rickshaw in respect of price, daily rent, charging cost and maintaining cost. It has another disadvantages like it may face accident frequently by brake fail & other ways because speed does not match with the structure of rickshaws (The Daily Star, April 22, 2014), as it is 3 wheel vehicles so it may upside down suddenly because rickshaw puller does not control instantly, rickshaw sometime brake down, if it takes excess load, It sometimes hanged with other vehicles when they drive careless into the jam, Rickshaw puller sometime make competition with CNG and Mishuk. So, rickshaw may face accident frequently. Consumption of huge electricity (The Daily Star, Aug. 2, 2013) for recharging the battery in an electricity-hunger economy is another great allegation against that vehicle. It is calculated that each rickshaw consume 300 units per month, it is totaled at 36 crore units yearly (Shaptahik 2000, 15 Nov. 2013).

#### **Rationale:**

Studying the problem and prospect of simple technology added manual vehicles is essential in the perspective of labor, time and traffic problems. So this is a very important research in examining the impact of introducing simple technology.

#### **Objective:**

The main objective of the study is to examine the impact of simple unreliable technology in creating a modified product- battery driven rickshaws in transport sector of Bangladesh.

**Specific objectives are-**

- 1) To study the status of battery driven rickshaw pullers and owners in Sylhet City to know the acceptance of that modified product by the service provider and service taker.
- 2) To study the problems and prospects of such vehicles by studying the different aspects of a new modified product.

**Methodology:**

**Research design:** The research is to study the problems and prospects of battery driven rickshaws in Sylhet City. So it is the research of descriptive nature.

**Sampling design:** To take the opinion of rickshaw pullers, the researchers have to depend on one probabilistic type of sampling- random sampling.

**Data Collection:** The data were collected from 300 rickshaw pullers selected by random sampling through a structured questionnaire that was checked by panel of experts to ensure validity. Further secondary data were collected from different publications, research journals, magazines, books and newspapers.

**Data analysis:** The data is analysis by using simple statistical techniques of descriptive statistics by using SPSS 19 and Microsoft Excel 2007 and interpreted by the outputs and by the researchers' judgments.

**Findings:****Studying the Profile of Owners and Drivers:**

Battery driven rickshaw are fivefold costlier than the paddle rickshaws, so ownership of such rickshaws is not generally possible by the poor rickshaw pullers. The middle income people have come forward to purchase such rickshaws and enjoy the rent that may come from the rickshaw drivers. As the payback period of such rickshaws is only 6 months, so investors are interested to purchase them by considering the highest rate of return. It is found that 87% of rickshaws are owned by middle income people, who are getting rents from rickshaw pullers as daily basis and only 13% are owned by the rickshaw pullers. But the rickshaw pullers have shown their keen interest in purchasing the rickshaws to get a good income daily. Some of them are thinking to purchase by managing the money by borrowing from relatives and even in exchange of high interest charge.

Though paddle rickshaws are less speedy and easily controllable, so persons of different ages are driving them subject to sufficient strength to pull. But the battery driven rickshaws are somehow mechanized and have a speed of 25-30 km in an hour. There is every possibility of facing accidents at any time and it requires sufficient knowledge to drive and control, so the person of suitable age intended to drive such rickshaws. It is found that 37.33% rickshaw pullers are in 21-30 years, 35.6% are of 31-40 years and only

22% are above 40 years old. 5% of rickshaw pullers are at the age of below 20.

Income level of the any person is supposed to be increased when persons take more risks and efforts to do any work. The drivers of battery driven rickshaws take more risk, more skill and mental efforts to do their job, so the income of them are supposed to be increased. It is found that 46% of rickshaw pullers earn Tk.600-699 in a day, 43.33% earns TK. 700-799. The more skilled 6.33% earns above Tk. 800 and less skilled 4.33% earns less than Tk. 600.

Investing in an uncertain project need higher rate of return and the business environment gives that opportunity as small numbers of competitors invest in such project. It happened to battery driven rickshaws. The buyers take risk as there is no legal framework to give permission to such vehicles and the future of such investment is uncertain. So the investor need greater return and ultimately they are getting it. 62% of the owners are getting TK. 300 per day from rickshaw pullers and the rest are getting less than 300. Naturally men want comfort in life. People of hard working want to minimize their physical labor in their work. Battery driven rickshaws are the modified version of paddle rickshaws that need less physical labor and supposed to increase income. So the people who are driving paddle rickshaws are opt to take the advantage of motorized rickshaws. Similarly people of other jobs where more physical labor is needed have the option and interest to drive motorized rickshaws. In this research the researchers divided the working people into three categories; Hard Physical working people: Farmer, Vehicle Pulling, Fishermen, Soil worker, Rickshaw pulling, Sanitary work, Construction and others; Medium & Low Physical working people: Tukai, Guard, Cowboy and others; and Mental Labor providing people: Business, Student, Shop workers & employees. It is depicted from the study that 63.67% motorized rickshaw pullers were hard physical worker, 31.67% rickshaw pullers was soft physical worker and only 4.67% rickshaw pullers' works mentally such as Business, Student, Shop workers.

Further it is found that, 66.33% of motorized rickshaw pullers were related workers like paddle rickshaw pullers, mechanics and others and 33.67% of them were unrelated worker.

**Problems of Battery Driven Rickshaws:**

There are three aspects of problems of this type of vehicle; lack of legal framework, cost & pricing and technical.

**Problems created by lack of legal framework:**

Law protects people from all suppressions. Lack of legal framework creates the opportunities for opportunity seekers to take the advantage of it for

personal purpose. These opportunity seekers are the people who have influences or power over others. The corrupt members of law enforcing agencies have the opportunities to exploit the weaken persons. Similarly, the corrupt members of political leaders take the advantages of lawlessness to exploit the weaken persons. The motorized rickshaw pullers are suffering from the problem as they are not granted with a license to drive the vehicle in the roads. The corrupt police officials and political leaders take those advantages to exploit the drivers. Other officials also harass the drivers in various ways. About 56.67% rickshaw puller said that they face problem by police harassment and 43.33% rickshaw puller said that they do not face such type of problem. About 89.00% rickshaw puller said they sometimes face problem by toll police on road and 11.00% rickshaw puller said they never face this problem. Not only police other influential members like political leaders are taking that illegal advantages to exploit the poor rickshaw pullers and owners. About 90.00% rickshaw puller said they sometimes face problem by toll leaders who take regular toll from them and 10.00% rickshaw puller said they never face this problem.

#### **More Charges:**

Not only that it also create the environment of charging more as rent by the owners from the rickshaw pullers and at the same time to the passengers by rickshaw pullers. Because of lack of pure competition, as many persons are hesitated to invest in such a risky project that can be banned at any time as some people and the competitors of transport sector are complaining due to illegal battery charges by these vehicles create shortage of electricity in the town. The experts are seriously thinking about unreliable technology political leaders that may be cause of accidents. Further there are harassments and toll collection by the corrupt police officers and corrupt leaders. All have threatens the entrepreneurs in investing in such vehicles and leaving the owners the opportunity to take sufficient rent from the drivers that create a payback period of only 6-7 months. Consequently, the drivers are taking at least double fare from the passengers to cover their recurring expenditures.

#### **Problems created by unreliable simple technology:**

In the simple paddle rickshaw a motor and battery is added to give the manual vehicle speed. This technology is not balanced, so there may be aroused problems to get that speed. Frequent accidents are caused by breakdown, upside down in time of take turns, hanged with other vehicles in time of overtakes, and others. Further, battery may be down in time of running, drivers have to face jerking as the vehicles are speedy with no shock absorbers in tires.

In that survey the drivers informed that 72.67% rickshaw pullers face accident when they drive rickshaw and 27.33% rickshaw puller said they do not face accident. 86.33% rickshaw puller face problem by brake fail and 13.67% rickshaw puller do not face this problem. 67.00% rickshaw pullers face the problem of upside down in time of turning and 33.00% rickshaw pullers said it does not happen when they keep brake.

Speed creates sense of competition among some drivers, especially who drove paddle rickshaws earlier. When they drive a motorized rickshaw, they have the speed and intended to become fast in time of driving and they also compete with similar vehicles like easy bike, motor bike, tempo, CNG driven taxi etc. In the time of speedy driving, they loss the control and face accident. 83.33% rickshaw pullers admit that they compete with other bikes when they drive and 16.67% admit they do not.

#### **Recommendation:**

First of all, the authority should take effective decision to construct legal framework to permit the vehicles on the road. Or by analysing the technical side, it may be banned immediately before creating a cause of loss for the middle income entrepreneurs and some driver entrepreneurs. BRTC may consider taking the liability to permit these vehicles as these are motor added and remove the conflict between City Corporation and the road permit authority.

Formulating legal framework, the authority should take steps to implement the rules. Either BRTC or City Corporations should take the responsibility to licensing them. If the motorized rickshaws get the permission, then take steps to remove the harassment of police members and political leaders in the form of taking tolls and disturbing the rickshaw pullers and owners.

To remove the technical difficulties the authority should invites the technicians, engineers and scientists to suggest the ways to enjoy the advantages of simple, cheap technology to take the taste of motorized vehicles in very low costs. And evaluate their suggestions before implementing and ensure the proper implementation if it show the effective results.

To reduce the accidents the opportunities to take the training to drive a simple vehicles should be arranged and make a provision of getting license to drive the rickshaws. There must be thinking about introduction of better brake system and better tire with shock absorption system. The tendency of competition of rickshaw puller with CNG and others are more. This problem will be reduced by providing separate lane for rickshaw pullers.

#### **Conclusion:**

Battery driven rickshaw make a great change in a society, it brings speed, reduces physical efforts, and

removes the blames of inhuman activities & signs of underdeveloped country. But at the same time, this modified product is facing problems in the legal and social aspects and also in technological aspects. The prospects in cost and pricing aspects will be availed if the legal limitations are removed. The operational and marketing aspects of the product is well promising and better signing now. Thus the legal and technological complexities and shortcomings should be minimized to welcome this simple technology in transport sector.

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**Table 1: Profile of Rickshaw Pullers (Battery Driven Rickshaws)**

Description		Percentage
Ownership	Middle Class Entrepreneurs	87%
	Rickshaw pullers	13%
Age	Below 20 years	5%
	21-30 Years	37.33%
	31-40 Years	35.6%
	40-50 years	22%
	Above 50	5%
Income of rickshaw pullers	Below Tk. 600	4.33%
	Tk. 600-700 daily	46%
	Tk. 700-800 daily	43.33%
	Above Tk. 800 daily	6.33%
Daily rent (owners get)	Tk. 250 daily	38%
	Tk. 300 daily	62%
Past profession of drivers	Works of hard physical labor	63.67%
	Works of medium and low physical labor	31.67%
	Works of mental labor	4.67%
Past work related to rickshaw pullers	Related	66.33%
	Not related	33.67%
Harassment by police	Yes	56.67%
	No	43.33%
Toll by leaders	Yes	90.00%
	No	10.00%
Accident faced by rickshaw pullers	Yes	72.67%
	No	27.33%
Brake Fail	Yes	86.33%
	No	13.67%
Upside down in time of turning	Yes	67.00%
	No	33.00%
Competition of driver with other vehicles	Yes	83.33%
	No	16.67%

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