

AFTER STUDY ON THE IMPACT OF MIRPUR DEMONSTRATION CORRIDOR PROJECT (GABTOLI-RUSSEL SQUARE)



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EXECUTIVE SUMMARY

Background and objective

Dhaka Transport Co-ordination Board (DTCB) has identified ten major corridors in Dhaka City and has decided to free all ten corridors from Non-Motorized Transport (NMT) by 2005. Of the ten corridors, the corridor from Gabtoli to Russel Square, named Mirpur Demonstration Corridor (MDC) has already been made NMT free in December 2002, as a pilot project.

The impact of NMT withdrawal are expected to be both negative and positive. It is likely to be negative due to loss of NMT as a means of transport, etc, and likely to be positive due to increased availability of bus transport, lower transport costs, faster average vehicle speeds along NMT-free corridor, reduced number of road accidents recorded since conversion, etc. In this backdrop, DTCB took the initiative to launch an after study on the impact of the intervention in the MDC. The Human Development Research Centre (HDRC) has conducted the study and responded to the following key issues: a) impact on transport users and traveling public along this corridor – with particular attention to impact on previous rickshaw and van users; b) Local residents' opinion about *impacts of conversion and alternative transport arrangements provided along the corridor*; and c) impact of the conversion of Mirpur Road on NMT pullers, particularly on rickshaw pullers.

The **principal aim** of the study was to assess the socio-economic impact of the withdrawal of non-motorized transport (NMT) from MDC on users of the particular road and NMT pullers. The specific objectives of the study were: i) to identify the extent to which NMT withdrawal has come to the benefit of the road users; ii) to examine the degree to which NMT withdrawal has led to change(s) in travel routine of women and children; iii) to examine whether NMT withdrawal has had any adverse impact on NMT pullers and if so, to measure the extent of such impact; iv) to examine whether and to what extent NMT withdrawal has affected other road users such as shoppers, shopkeepers, traders and marketers of *Kuncha* markets adjacent to the MDC; and v) to examine whether and to what extent NMT withdrawal has affected other road users including school and college going children, office going population and local residents.

The **key research question** of the after study was to explore the actual positive and negative socio-economic impact of conversion of the corridor to NMT-free operations on: (a) transport users/traveling public (school children, college students, office workers, market users, local businesses, other local residents, etc) by age, gender, and income group, (b) local residents and businesses, and (c) NMT pullers.

Methodology and Implementation

The study was carried out using event study methodology whereby NMT withdrawal had been defined as the event for the study. The nature of the event was presupposed to be such that it had directly and/or indirectly influenced the behavior and lifestyle of many stakeholders of the MDC project. The major stakeholders of the project were categorized into two broad categories – road users and transportation and other service providers in the project area. The major behavioral and lifestyle changes caused by the event were assumed to include the following: i) change in travel frequency of transport users; ii) change in the mode of transport used by both categories of stakeholders; iii) change in

daily routine of women, children and men using the road; iv) change in income of NMT pullers who were forced to shift to complementary roads, to feeder roads, to roads completely outside the project area, or to other occupations; and v) change of lifestyle of NMT pullers in terms of livelihood privileges such as location and quality of residence, consumption and hardship.

In order to identify the nature, costs and benefits of such behavioral and lifestyle changes of major identifiable stakeholders, the study was designed to capture the impact of the event on the stakeholders. Primary data were collected from the two broad categories of stakeholders using two different questionnaires – one for the NMT pullers and the other for the road users including women, children, shoppers, shopkeepers, commuters and other road users.

Samples were drawn from each of the two broad categories of stakeholders – road users (789) and NMT pullers (304). Two separate sets of questionnaires were administered for survey data collection. Besides the individual interviews, 11 Focus Group Discussions (FGD) were conducted with different categories of road users. Focus groups comprising on average 9 members each were formed from each category of respondents.

Findings

The average age of the rickshaw pullers and van drivers was around 35 years, while it was 39 years for the push cart drivers. Van and push cart drivers (97%) were married, and it was 88% among the rickshaw pullers. Over half of the NMT pullers are illiterate with nearly one-sixth completed 5 years primary schooling.

On average NMT pullers family consisted of 5.4 persons with 3 persons living in Dhaka. Forty one percent of respondents reported to be Dhaka based completely, and 50% having family members except himself in both the places. The rickshaw pullers average family size was 5.3. About half of their family members are living in villages (2.53 persons). The number of income earners in pullers' families had slightly risen after the withdrawal compared to the period before withdrawal of NMTs from the corridor. It might have been related to the event of withdrawal. The average family income of NMT pullers has dropped by 20 percent after withdrawal.

The average experience of all categories of NMT pullers in the occupation is 10 years. They had been using the corridor for an average period of 8 years. The average monthly working days of NMT pullers after the withdrawal has increased by 1.1 day (from 24 days to 25 days). Sixty percent of the rickshaw pullers reported to work full-day shifts at present, while 57 percent used to work full-days prior to the withdrawal. On the other hand, 36 percent were engaged in half-day shifts compared to 38 percent before the withdrawal.

A rickshaw puller's average gross earning was Tk229 per day before withdrawal, while their present average daily gross income was only Tk172. The estimates show that the total amount of loss in gross income among the respondent rickshaw pullers was Tk.4, 015,632 (US\$ 68,000) per year.

The average net monthly income of a rickshaw puller appears to have decreased by 32% and is currently Tk2, 600 only. Before the withdrawal, on average, a rickshaw puller spent Tk2, 448 (64%) of his net income in Dhaka and the rest (Tk1, 785 or 36%) in

his village. At present the amount spent in Dhaka decreased by 27%, while the amount sent to village lowered by 41%.

Three out of every four NMT pullers had reported that their household income decreased significantly after the withdrawal. Over four-fifths of the pullers reported decrease in income from NMT sources. The pullers appear to have adopted different coping strategies to meet the sudden financial setback. In general a large proportion of the pullers compensated the reduction in income by lowering their food consumption, in most cases, by increasing cereal intake and lowering intake of other food items. At least 36 percent families of NMT pullers had to lower their food consumption.

The withdrawal of NMT in the corridor caused changes in the profession for some pullers. Forty-one percent of all pullers reported of knowing somebody who had to change the occupation. Thirty-eight percent rickshaw pullers stated that some of the former pullers went back to agriculture sector.

Inquiry into the pullers' perception about the necessary steps that government should take before the withdrawal of NMT to minimize the probable adverse impact on their life reveals that arrangement of alternative rehabilitation for the affected pullers is on top. Fifty-eight percent of the rickshaw pullers and half of the van pullers and pushcart drivers mentioned about providing rehabilitation. Detailing the ways of rehabilitation, more than one-fifth opined that it would be necessary for the government to provide micro-credit to the affected persons. One-third suggested for the construction of special lanes for NMT movement along the corridor instead of a total withdrawal. Answering to the question which professions/occupations the pullers would prefer to switch over in case similar withdrawal like the one in MDC would be replicated in other major arterial roads, over one-third gave their preference for petty trading. One-fourth expressed the desire to go back to agriculture (in-farm activities). Around one-fourth would prefer working as day laborers and around one-twelfth preferred to switch over as MT drivers.

NMT pullers (rickshaw, van, push cart), in general, are not in favor of withdrawal; only 4% are in favor of replication of NMT withdrawal. More than one-third expressed that such steps would increase hardship in the livelihood of the pullers and people associated with the occupation. Every fourth responded maintained that NMT withdrawal would make the pullers jobless, and reduce the income of the poor pullers. One out of fourteen pullers expressed their concern that the replication of withdrawal in other major corridors without implementing rehabilitation program would further deteriorate the law and order situation in the country in general and in Dhaka city in particular.

The sample of NMT users comprises eight categories of users with a total of 790 respondents. More than three-quarters of transport-user-respondents are 19 to 40 years old. The average age of the whole sample is 31.6 years with the *kuncha* market shoppers and local residents forming the two oldest age categories, average age being 36 years each.

The average years of education of NMT user is 10.4. The highest average education was found among the office goers (13.6 years) followed by college/university going female students (12.4 years), while the lowest average was represented by the garments workers (5.4 years). About half the mothers accompanying school children have completed 11 to 14 years of education. The overall monthly average household income is approximately Tk.17,000. Within the individual categories of respondents, the mothers accompanying school children have reported the highest average monthly

household income of Tk.22,683, while the garments workers reported the lowest monthly income of only Tk.6,418.

A very large proportion of population living along both the sides of the MDC corridor used to use and are still using rickshaws as one of the major modes of transport. Rickshaw withdrawal has affected almost every passenger traveling along the corridor. However, the degree to which it affected individual passenger might vary but there is no doubt that a wide variety of the population is directly affected by rickshaw withdrawal.

It was observed that the passengers tend to travel for a wide range of purposes including accompanying children to school, attending school, college or university, going to work, doing *kuncha* market and other shopping, visiting friends and relatives, for recreation and various other purposes like visiting doctor, or visiting a patient in a hospital. Most people (approximately 75 percent) make one to two round trips a day.

The passengers use a number of transport modes including rickshaws, buses, CNG baby taxis, taxi cabs, cars, rickshaw vans, motor bikes, tempo, human haulers, bi-cycles etc. However, rickshaw remains the predominant transport for majority of the city passengers, particularly in making short distance trips. Most passengers interviewed used to use and still use rickshaws to meet most of their traveling needs including accompanying children to school, going to work, doing *kuncha* bazaar and other shopping, going to work, and for various needs.

NMT withdrawal saved an average of 9 minutes a day per passenger. Prior to NMT withdrawal it used to take 30 minutes on average to make a trip to passengers' usual destination while it takes 22 minutes on average per trip per passenger after withdrawal.

NMT withdrawal increased travel cost for average traveler. The average monthly expenditure on conveyance increased from Tk. 500 before withdrawal to Tk. 546 after it while the average daily cost of travel for an average family increased from Tk. 83 to Tk. 91.

When rickshaws are not available along the corridor, rickshaw passengers mostly switch on to buses, CNG baby taxis, and even taxi cabs. Interestingly, a significant proportion of rickshaw passengers have switched to walking.

Causing or aggravating traffic congestion, jeopardizing traffic discipline, slowing down travel speed, and causing accidents are the main problems caused by NMTs plying along the corridor.

The main benefits of having NMTs along the corridor include offering travel comfort, travel flexibility (i.e., available at doorsteps and for virtually all distances and destinations at all times), low cost (according to some passengers), not requiring much waiting time, etc.

The main problems of MTs including buses include their non-availability (severe shortage of public transport at peak hours), requiring long waiting time, lack of travel comfort and privacy, non-availability for making short trips, CNGs and taxi cabs being costly, non-suitability to carry *kuncha* bazaar shopping in buses due to passenger rush, etc.

The main benefits of MTs include their speed, and low cost fares of public transport, i.e., buses.

A large share (54 percent) of the passengers are in favor of NMT withdrawal notwithstanding the travel difficulties caused by such withdrawal.

NMT withdrawal should be simultaneously carried out with rehabilitation of rickshaw pullers – was the main recommendation of majority of transport users. Most transport users demand immediate substantial increase in the supply of public transport on Dhaka city roads in order to mitigate the sufferings of city passengers.

Conclusions

The **main conclusions** from the study are as follows:

1. NMT withdrawal has caused hardship to NMT pullers. It forced increase in the number of days they work, number of hours they are on the wheel, and decreased their income, consumption, and amount of money they used to send home to support their dependents.
2. Rickshaw pullers are of the opinion that they would support any move towards rickshaw withdrawal from selected city roads if adequate measures are taken to rehabilitate them. Possible forms of rehabilitation suggested include providing training to adopt other occupation(s), providing small loans (i.e., micro finance) to start their own venture, e.g., small shop or agricultural venture, etc.
3. A large proportion of population living on both sides of the MDC corridor used to use and still use rickshaws as one of the prevalent modes of transport. Rickshaw withdrawal has affected almost every passenger traveling along the corridor. The degree to which it affected individual passengers varies.
4. NMT withdrawal saved an average of 9 minutes a day per passenger to reach the usual destination.
5. NMT withdrawal increased travel cost for average traveler. The average monthly expenditure on conveyance increased from Tk.500 before withdrawal to Tk.546 after it.
6. When rickshaws are not available along the corridor, rickshaw passengers mostly switch on to buses, CNG baby taxis, and even taxi cabs. Interestingly, a significant proportion of rickshaw passengers have switched to walking.
7. Causing or aggravating traffic congestion, jeopardizing traffic discipline, slowing down travel speed, and causing accidents are the main problems caused by NMTs plying along the corridor.
8. The main benefits of having NMTs along the corridor include offering travel comfort, travel flexibility (i.e., available at your doorsteps and for virtually all distances and destinations at all times), low cost (according to some passengers), not requiring much waiting time, etc.
9. The main problems of MTs including buses include their non-availability (severe shortage of public transport at peak hours), requiring long waiting time, lack of travel comfort and privacy, non-availability for making short trips, CNGs and taxi cabs being costly, non-suitability to carry *kuncha* bazaar shopping in buses due to passenger rush, etc.
10. The main benefits of MTs include their speed, and low cost fares of public transport (buses).
11. A large part (54 percent) of the passengers are in favor of NMT withdrawal notwithstanding the travel difficulties caused by such withdrawal.

12. “NMT withdrawal with simultaneous rehabilitation of rickshaw pullers” – was the main recommendation of majority of transport users. Most transport users demand immediate substantial increase in the supply of public transport on Dhaka city roads in order to mitigate the sufferings of city passengers.

The **main implication** of the study is that it throws some light into the debate as to whether and to what extent NMT withdrawal along the MDC project has come to the benefits of transport users using the corridor. It has also identified whether and to what extent the withdrawal has affected the NMT pullers in terms of lost income and effect on lifestyle. The study shows that notwithstanding the difficulties faced by the passengers, a large part of transport users support the withdrawal.

Recommendations

The recommendations are made in light of the two major understandings derived from the study. They are:

First, it must be borne in mind that NMT withdrawal is a sensitive issue – both socially and economically. The costs and benefits must be weighed from a comprehensive perspective. There are obvious benefits of NMT withdrawal in the form of more disciplined traffic flow, higher average speed on NMT free roads, less traffic congestion, etc. However, there are some very direct costs to NMT pullers as well as transport users. The transport user survey shows that more than 90 percent of transport users used to rely on rickshaw at different degrees to perform their day-to-day travel. The NMT withdrawal has affected all these users with different degrees. However, a large part of the passengers have still welcomed the withdrawal with the hope that the authorities would make necessary and immediate arrangements to fill in the vacuum in the supply of transport by introducing more public transport, CNG driven baby taxis, taxi cabs and the like. The passengers are disappointed to see that even one and a half years after the withdrawal, transport supply is still acutely short of the huge and increasing demand for transport. Therefore, the authorities need to use all possible avenues – private and/or public – to increase the supply of transport facilities along the MDC.

Second, the effect of NMT withdrawal on NMT pullers is adverse and significant. It must be borne in mind that the process of coping with the loss of occupation, income, and lifestyle is not automatic. Rickshaw pullers cannot automatically switch over to another occupation or to go to another region and successfully find an alternative occupation as a result of NMT withdrawal from the MDC. There is a big social risk of large-scale loss of jobs and income of significant numbers of rickshaw pullers on potential deterioration in poverty situation and of law and order situation of the country. Therefore, it is important to take positive actions to minimize the problem of NMT pullers before further withdrawal of NMTs from other arterial roads.

Appreciating the above points, the following recommendations are made:

1. Some substantive steps should be taken before or vis-à-vis NMT withdrawal from other arterial roads. Such steps might include one or more of the following:
 - (a) NMT pullers should be rehabilitated by means of granting small loans and/or by the provision of training of some sorts, e.g., CNG driving, car driving, or bus driving.

- (b) They may be allowed a choice of giving up NMT pulling and accept to undertake other occupation or vocation in exchange for the training for the alternative occupation.
2. NMT withdrawal has the ultimate support of a simple majority of transport users. Therefore, the authorities might go ahead with phased NMT withdrawal from other priority corridors in Dhaka city provided the NMT pullers are offered adequate compensation – technical and/or financial – and allowed adequate notice to switch over to preferred alternative occupations.
 3. The transportation needs of huge number of passengers – existing and potentially increasing – must be met vis-à-vis any further NMT withdrawal. NMT withdrawal has caused enormous difficulty, hardship, and inconvenience to millions of NMT and MT users along the corridor. No alternative has been arranged to fill in the transport vacuum caused by the withdrawal. Therefore, the following actions need to be taken without delay:
 - (a) Increase the supply of public transport;
 - (b) Increase the supply of CNG driven baby taxis;
 - (c) Increase the number of taxicabs;
 - (d) More private transport suppliers must be encouraged to introduce Metro Link type buses along the MDC;
 - (e) Decent and spacious passenger sheds and ticket terminals should be built in all bus stops along the MDC; If resources are constrained, then passenger sheds must be built in major bus stops including the six locations identified in the present study;
 - (f) Immediate steps must be taken to increase transport supply e.g., buses during morning and evening peak hours to alleviate the acute transport shortage facing school, college, university, and office going passengers;
 - (g) Tough measures must be taken to strictly enforce traffic laws;
 - (h) Harsh penalties must be imposed for violation of traffic laws like dropping off and picking up passengers at and from the middle of the road, allowing passenger movement (drop off and pick up) anywhere except at designated bus stops, etc.; and
 - (i) Private transport companies could be negotiated to introduce school buses at mornings and afternoons to exclusively cater for school boys and girls; if necessary the fares for such services could be fixed at a higher rate than ordinary fare; the BRTC might also consider introduction of such services on a user paid basis.

**Salient Features of NMT withdrawal
Aggregate Table on NMT Pullers**

Background Characteristics				
	Rickshaw	Van	Push cart	
1. Average age (yrs)		34	35	39
2. Married (%)		88	97	97
3. Illiterate (%)		53	50	53
(Grade 6+)		(16)	(20)	(13)
4. Average family size		5.3	5.2	6.6
5. Residence of family members. (%):				
Exclusive in Dhaka		38	58	43
Exclusive in Village		9	6	10
Both		53	36	47
6. Average yrs. pulling		10	10	13
Family income earners & income: Rise & fall				
Puller type	# Income earners		Average monthly income (in Tk)	
	Before	Now	Before	Now
Rickshaw	1.24	1.35	5569	4565 (↓18%)
Van	1.14	1.31	6574	4519 (↓31%)
Push Cart	1.43	1.60	6972	5291 (↓24%)
Pulling duration: A proxy of hardship				
		Rickshaw	Van	Push cart
Monthly work days (average):				
Before		23.2	25.4	25.5
Now		24.4	26.0	26.1
Average. daily work hours:				
Before		10.2	10.4	11.5
Now		10.7	11.6	12.3
Changes in net income (monthly; in Tk): Decline more pronounced than overall Family income				
		Rickshaw	Van	Push cart
Before		3834	4836	5539
Now		2600	2837	3565
(%)↓		32	41	36
Changes in pullers contribution to declining Family income				
		Rickshaw	Van	Push cart
Before		68.8	73.6	79.4
Now		57.0	62.8	67.4

Changes in HH food consumption & expenditure pattern: Now as compared to before (% pullers reporting)			
	Increased	Decreased	Remained same
Food items (physical amount)			
Rice	37.8	36.2	26.0
Ata	18.8	46.7	34.5
Vegetable	28.9	55.3	15.8
Fish	4.9	85.9	9.2
Meat	3.6	87.5	8.9
Cooking oil	15.5	65.1	19.4
Other expenses (in Tk)			
House rent	65.5	2.6	8.2
Electricity	31.3	1.3	8.2
Clothing	50.7	27.3	22.0
Health	56.3	17.4	26.3
Education	44.1	5.6	10.9
N			304

Aggregate Table on Transport Users

Some Characteristics of Transport Users								
1. Average age (year)							32	
2. Average monthly HH income (Tk.):							16,986	
Travel frequency: Before & Now (%)								
User type	School		Col./Uni.		Offi./work		K. Bazar	
	Now	Before	Now	Before	Now	Before	Now	Before
Frequent user	94.8	94.8	100	100	99.5	99.6	94.3	96.1
Infrequent user	5.2	5.2	-	-	0.5	0.4	5.7	3.9
N	213		87		377		409	
Present predominant mode of transport of past Rickshaw passenger (%)								
Transport	Purposes							
	School	Col./Uni.	Offi./work	K. Bazar	Other shopping	visiting fri/rel.	Other	
Walk	18.1	10.4	29.6	20.8	6.5	5.5	9.8	
Rickshaw/van	59.6	48.1	41.7	72.5	46.0	38.7	52.9	
Tempo/Hauler	-	2.6	3.0	-	2.0	0.4	-	
Bus	24.4	51.9	31.3	3.7	29.4	31.3	33.3	
Baby taxi/CNG	9.3	18.2	19.6	14.4	30.0	39.1	35.3	
Taxi cab	3.1	2.6	2.2	1.7	8.5	14.8	3.9	
Private car	1.6	-	0.4	0.3	0.4	1.6	2.0	
N	193	77	230	298	446	256	51	
Time spent in traveling towards usual destination (minutes)								
Category of respondent							Now	Before
Mothers accompanying school children							21.8	29.9
College/university going female children							26.3	36.2
Garments workers							19.0	23.6
Kuncha shopkeepers and marketers							22.4	30.0
Kuncha market shoppers							21.8	30.1
Other Shoppers							21.9	32.8
Office Goers							24.4	33.7
Local residents							20.0	29.3
Average							22.0	30.4
Monthly cost of travel to usual destination (Tk.)								
Category of respondent							Now	Before
Mothers accompanying school children							717.8	649.5
College/university going female children							424.2	459.7
Garments workers							136.3	159.3
Kuncha shopkeepers and marketers							832.0	750.1
Kuncha market shoppers							415.9	353.4
Other Shoppers							440.6	408.7
Office Goers							701.5	621.4
Local residents							558.3	496.4
Average							546.4	500.8
Changes in life style (%)								
Change in market for shopping							25.4	
Change in destination of recreational/social trips							13.3	
Change in frequency of recreational/social trips							12.4	

Change in residence	4.9
Change in work place/ business location	4.7
Change in school location	3.3
Reported benefits of NMT plying (%)	
Can travel to any destination/no need to use multiple modes	28.1
Less expensive	22.7
Easy accessible/ no need of waiting for buses	21.0
Traveling comfort/ less hassle	19.1
Easy to carry luggage/shoppings/purchases	12.0
Reported problems of NMT plying (%)	
Traffic jams	61.5
Lots of accidents	25.8
Time consuming	24.6
Reported benefits of NMT withdrawal (%)	
Less traffic jams	57.7
Saves time	30.6
Reduce accidents	14.4
Reduce traveling cost	11.0
Reported problems of NMT withdrawal (%)	
Taxi/CNGs are expensive	27.1
Bus is not readily accessible/long waiting time	14.4
Too much crowds/ difficult to get seats/ uncomfortable traveling	13.2
Difficult to convince Taxi/CNGs for short traveling	12.8
Difficult to reach lot of destinations using NMT	11.6
Suggestions to overcome inconvenience of NMT withdrawal (%)	
Public MT fleet needs to be expanded	41.3
Reduce public MT fare	31.3
Increase number reserved seats–special bus service for females	18.1
Introduce/construct separate lanes for NMT	15.2
Rehabilitate the NMT pullers	14.2
Suggested steps before NMT withdrawal (%)	
Pullers rehabilitation and NMT withdrawal must go side by side	36.7
Introduce quality bus/ increase numbers	27.0
Reduce CNG auto rickshaw fare	8.4
Improve the footpaths	6.8
Introduce more CNG auto rickshaws	5.3
N	790