

Gender Analysis of Two Components of the World Bank Transport Projects in Lima, Peru: Bikepaths and Busways

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Executive Summary

Improvements in transport infrastructure and services are almost always assumed to benefit men and women (generically referred to as “users”) equally. Well-built roads, bridges, or efficient bus services are unquestionably beneficial to all users. But the way and the extent in which men and women participate in these benefits varies according to several factors, including travel purpose, available budget, and the risks involved in the trip.

This is a pioneer work on the relationship between public transport services and gender in urban settings. This report is not a comprehensive study, but rather a case analysis based on two components of World Bank transport projects in Lima, Peru: busways and non motorized transport. The trends and patterns identified, however, should raise the awareness of transport specialists, urban planners and policy makers about critical issues that shape users’ behavior with respect to their choices and possibilities of transport. The specific needs of prospective men and women users differ in important ways and these differences should be explicitly considered in the design of transport infrastructure or service interventions in cities.

Transportation is a key matter for people of all socioeconomic levels in Lima-Callao. While transportation is typically not the largest item in household budgets, it is an essential item. Being able to travel is the precondition to satisfying basic needs -- going to work or to the market, taking the children to school, etc. As one man interviewed clearly put it, *“If you don’t have money for the fare to go to work, how will you pay for services and food?”*

The conditions and circumstances in which travel takes place in Lima-Callao today are definitely not the best. Recent studies sponsored by the World Bank have indicated that an estimated \$500 million are lost every year in man-hours and operational costs due to the inefficiencies of the system. Over-combustion of 13.2 million liters of gasoline and over-emission of 1,000 metric tons of air pollutants by an obsolete fleet are a constant health threat. Finally, 3-4 persons are killed daily as a result of traffic-related accidents.

In Lima-Callao, the poor quality of public transportation service reflects a weak institutional framework and poor service, more than infrastructure deficiencies. The deterioration of accessibility and mobility affect men and women users in different ways. Solving the critical problems that Lima-Callao is confronting with regard to the mobility of its more than seven million inhabitants will have to address these issues.

Men and women have different priorities in their valuation of transport attributes; only road safety appears significantly high on both lists (see chart below). While men value speed -sometimes at the expense of treatment or personal security- women’s worries are centered on personal security and aspects related to their well-being while on the vehicle, such as comfort, courteousness and hygiene; speed is not among the top priorities for women. Conversely, the expense of transportation is important to women and not among men’s priorities.

Women	Men
(+) -most important- Personal security (theft, harassment) 1. Road safety (accidents) 2. Expenses 3. Comfort 4. Courteous treatment 5. Hygiene 6. Order 7. -least important- (-)	(+) -most important- 1. Speed (get to destination fast) 2. Road safety (accidents) 3. Order (schedules, routes, stops) 4. Single fare 5. Personal security (thefts) 6. Courteous treatment 7. Hygiene -least important- (-)

One of the key findings of the study is that “safety” is a multidimensional attribute and the locus of important gender differences. From the perspective of the users, safety encompasses not only road safety, a classical concern in the design of transport interventions, but also personal safety issues that shape the way in which users- especially women, make use of the system. To the users, road safety concerns the passengers in a public transport vehicle and pedestrians. Personal safety, on the other hand, refers both to the constant risk of theft or assault while on the bus stop or vehicle, and to the threat of being sexually harassed, either physically or verbally. For women, all of these dimensions are a constant source of stress. To the hazard of theft and assault, they add the constant fear of being sexually harassed. In order to cope with these difficulties, they develop a series of strategies, ranging from refraining from traveling on certain routes, or at night alone, to carrying pins while traveling on the bus in order to keep molesters away.

This paper suggests that the separated busway, initiative will begin to address the pressing need for a reliable and safe means of transport in Lima-Callao. The implementation of this project would address the major concerns of both male and female users, providing increased speed and road safety, more comfort, increased personal security and courteous operators. Although the proposed busway covers only one of the routes that will be necessary to furnish a complete network of service throughout the city, users perceive that it will be beneficial for the city as a whole.

The possibility of having mixed teams of male and female operators on the busway buses was specifically evaluated, and male and female users of all socioeconomic levels regard this as a highly positive initiative that would attend to the personal security and treatment issues. Furthermore, women saw on this idea an interesting employment opportunity.

In terms of non-motorized urban transport interventions, this document is also fundamental input for the preparation of future projects. The issues that emerged from the analysis of the Non Motorized Transport of Metropolitan Lima experience point to some key lessons that must be taken into consideration.

The existence of bikepaths is a necessary but not sufficient condition for the use of bicycles in a city such as Lima-Callao. Bikepaths protect bikers from traffic, but they do not provide security against theft or –in the case of women- sexual harassment. Whenever the use of bikepaths needs to be combined with cycling along other main avenues where bikepaths are not present, and bikers share road space with motorized traffic, this represents a serious deterrent of bicycle usage for both men and women.

The impact of bikepath construction on neighbors and residents needs to be taken into consideration in their design. Furthermore, a participatory approach is necessary to this intervention, in order to generate goodwill toward the project and to contribute to the creation –or strengthening- of a bicycle culture.

Finally, the promotional and educational efforts are a critical component for the success of a non-motorized transport project. The communications campaign needs to address the specific issues that concern men and women with respect to bicycle riding and handling, and to the use of bicycles and bikepaths.

The multi-method approach taken in this study may contribute to the design of future studies. A quantitative household survey, focus group sessions, in-depth interviews and participant observation were used as sources for the analysis. While the survey outlined some of the general trends in the use of public transportation, the focus group sessions allowed for in-depth examination of each issue, and the assessment of its significance for each age and socioeconomic level by gender. Focus group sessions were carefully planned and executed by professionals following a rigorous selection process of the participants, and preparation of the discussion guides. These features have ensured the quality of the information gathered through this technique.

CONCLUSIONS AND RECOMMENDATIONS

“Corredor Vitrina”

Conclusions

1. The CV initiative should begin to address the pressing need for a reliable and safe means of transport for the more than 9 million trips made daily in Lima-Callao. The successful implementation of this pilot project will contribute to lay the way for a sustainable, sensible solution to the problems of transportation of Lima-Callao, where women and the poor are the most hurt.
2. The implementation of the CV would be highly beneficial for male and female users of public transportation in Lima-Callao. It would address the major concerns of both of these groups: increased speed and road safety, more comfort, increased personal security, and courteousness of the operators.
3. The proposed route of the CV is viewed by public transport users as valuable for the city as a whole, even by respondents who do not use this route for their usual trips.
4. Travelers who make longitudinal trips would mainly use the CV route. Men and women who work outside the home or those who study would be prime beneficiaries from this route.
5. Benefits would also accrue insofar as household expenditures for transport would decrease for families where one or more family members make use of this route.
6. Focus group participants very positively evaluate the characteristics of the CV. In fact, male and female participants spontaneously mentioned most of the CV features (larger, safer buses, professional, courteous drivers, fixed routes, stops and schedules) as attributes of their “Ideal Means of Transport”.
7. The possibility of having male-female mixed teams working in the CV buses was very favorably received by male and female groups, specially by young (18-24) C and D level women, who saw this as an interesting employment opportunity. Mixed teams of bus operators would help alleviate theft and sexual harassment within the public transport vehicles.
8. CV buses, being “formal” would also be perceived as “expensive”, because of their set fares and the impossibility of negotiating fares with the collector. There is, however, a high willingness to pay fares that are over those currently paid at buses, because of the recognized savings in time and transfers.
9. There is concern about the social consequences of this project on current public transport workers who would be unemployed once the CV is implemented.
10. Some of the benefits from the CV (such as reduction in sound and air pollution levels) would not be directly noticeable to the users.

Recommendations

1. Security concerns are vital for all users, and especially for women. Well lit, clean bus stops, uniformed professional drivers and collectors and surveillance will be necessary to ensure the quality of the service.
2. The existence of mixed teams of bus operators is perceived as one of the most positive aspects of the CV. The use of such teams should be promoted, implemented and publicized as an added value of the project.
3. The CV should be presented as part of a larger initiative to construct similar bus corridors on other avenues in Lima-Callao. Users wish this initiative to be a starting point for a network of busways that will provide quality service to the different zones of Lima-Callao.

4. An educational campaign will need to be launched with the project. Users of public transportation in Lima-Callao are not used to waiting for buses, to schedules or to walking to and from the bus stop. Also, there is a “bargaining culture” that is being applied to the transport service. Users will need to be educated on the rules of the new service, emphasizing its benefits, improvements and savings.
5. The educational campaign should raise the users’ consciousness about other dimensions of the service that are improved by the CV, and that would not be easily perceived, such as reduction of noise and air pollution levels. This project should serve as an opportunity to enhance the user’s perception of the dimensions of their quality of life.
6. Collecting information on the performance of the CV and its buses from the users will be useful feedback for the project. It will be valuable to collect disaggregated information for male and female users, and not treat users as a single, uniform group.
7. The CV will –at least for some time- cohabit with the combis, custer and micros. The management of the CV will help shape the future of the transport system in Lima-Callao, and the decisions that necessarily will have to be made about the different types of units and routes.

Pilot Project of Non Motorized Transport of Metropolitan Lima (PPTNM)

Conclusions

General

1. The PPTNM sought to *create* demand for the use of bicycles in Lima-Callao and was not a response to a latent existing demand. The intent to generate this demand, however, was not accompanied by a coherent communications campaign, and the results have not been as positive as expected.
2. The existence of bikepaths is a necessary but not sufficient condition for the use of bicycles in Lima-Callao. Bikepaths protect bikers from traffic, but they *do not* provide security against theft or –in the case of women- sexual harassment.
3. It is mainly men that hold jobs in the industrial zone of Lima-Callao, where the bikepaths were constructed. This fact restricts the number of women who would use these bikepaths to transport themselves to work, or use these bikepaths for work-related purposes. This helps explain the minimal presence of women on the bikepaths.
4. The bikepaths cross along a particularly insecure area of the city, where delinquency is very high. This naturally limits the attractiveness of the bikepaths for women –who feel more at risk of theft and harassment- and helps explain the low female usage.

Bikepaths

5. The design of the bikepath routes does not form a network. It is rather a group of longitudinal routes that always needs to be combined with the use of other avenues and roads where there are no bikepaths. Sharing road space with motorized traffic along main avenues acts as a deterrent of bicycle usage.
6. Bikepaths in Lima-Callao are not being properly maintained, due to insufficient resources from the MML and to the lack of collaboration of the district municipalities involved. Therefore, bikepaths have garbage, construction residues, and potholes that diminish their appeal and usefulness. Women are particularly sensitive to the state of the bikepaths.
7. The impact of the bikepaths on the neighbors and residents was not properly assessed, and not adequately taken into consideration for their design. This resulted in a disapproving attitude of the neighbors, who felt threatened by the project, rather than part of it. The

PPTNM did not make the most of the opportunity for creating goodwill toward the project through the participation of the neighbors as beneficiaries.

Promotion and Educational Campaigns

8. Currently, there is not a culture of use of the bicycle as a means of transport, especially by women. This requires of specific efforts on education and promotion –both for the general population and targeted to women- that have not taken place.
9. Bicycles are quite unfamiliar machines for women, who often feel unconfident as to how to handle and repair them.
10. The promotional efforts undertaken for the PPTNM have been centered solely around the PlanBici bicycle credit program. They have not designed communications pieces targeted to female audiences and do not address the specific issues and concerns of women with respect to bicycle riding.

Bicycle Credits: Plan Bici

11. PlanBici has not yet found a way to reach informal workers –male and female- who would be prime subjects for the Program. There is a need to create mechanisms that allow the credit program to engage these subjects without incurring in high loan default rates.
12. PlanBici did not design a strategy with women as the target group. Women's organizations such as Vaso de Leche or Comedores Populares were not approached as beneficiaries of this credit program.

Monitoring and Evaluation

13. Monitoring is a valuable activity to provide continuous feedback for the project. The selected consultant has adequately performed this, although additional data on bicycle usage by women could be collected.
14. Actual users of the bikepaths only respond monitoring surveys, while potential users are not being reached. Thus, the project is not receiving feedback information about why these non-users who are residents of the area of influence of the bikepaths, refrain from riding bicycles. The reasons posed by men and women should be analyzed separately.

Recommendations

General

1. The bikepath network and the bicycle credit program need to be conceived within a holistic approach to the solution of the public transport problem in Lima-Callao. This is, the use of bicycles needs to be conceived as a complement to other transport interventions that need to be addressed. For instance, if safe parking spaces were available at strategic locations, users could enjoy multi-modal transport, using bicycles to reach the buses that will take them in longer trips.
2. It is necessary to work *with* public and private organizations in order to raise their awareness of the benefits of cyclin and create a favorable environment for bicycle riderhood. This commitment will be translated –for instance- in the construction of secure bicycle parking in public buildings, municipalities, police stations, markets, health centers, businesses, banks and schools, among others.

Bikepaths

3. Because of their design and location, current bikepaths are useful mainly for men. Women would benefit from the construction of bikepath circuits that join destinations that are commonly visited by women, such as schools, health centers, stores and markets. Adequate parking is necessary at these destinations.

Promotion and Educational Campaigns

4. Since bicycles have commonly been regarded as a sort of “toys” used mainly by boys, many women are not familiar with them and have never learned how to ride. Even for those women who do know how to ride, the handling and maintenance of the bicycle is something foreign. The educational campaign must address these issues, especially for women.
5. The promotional and educational campaign needs to be very careful with the type of messages being spread, in order to avoid being discriminatory against women, or giving sexist messages that discourage them from getting involved in the program.
6. The promotional and educational efforts should be launched even before the works start on the street. It is necessary to create ownership for the project from its beneficiaries, and to make the most of the goodwill that can be created through this process. Failure to engage the population and the local authorities will result in antagonism toward the project and will threaten its sustainability.

Bicycle Credits: Plan Bici

7. Credit culture is very incipient in Peru, especially among the lower socioeconomic levels, who historically haven't had access to credit. PlanBici must include an educational component designed to inform the clients about what it means to get a personal credit, and what responsibilities and liabilities it entails.
8. Bicycle credit programs should design a specific strategy with women as the target group. This should include the elaboration of messages tailored to women's worries and concerns, as well as working directly with women's organizations such as Vaso de Leche or Comedores Populares as organizations whose members can benefit from the program.
9. The bicycles being offered through PlanBici should include models that are more comfortable for women (for instance, models where the woman can sit up straight and not lean forward so much) equipped with baskets and seats for carrying children.
10. In order to reach the poor in a widespread fashion, the bicycle credit program must devise a way to reach the informal sector, men and women. It will also be necessary to create a strategy to work with the women's organizations that exist on each district.

Monitoring and Evaluation

11. Evaluation activities should include surveys to potential users as part of the monitoring of the different sub-components of the project. This will indicate whether and how the promotional efforts are being successful in expanding the number of bicycle riders and improving the bicycle culture in Lima-Callao.

Profile of Socioeconomic Levels in Lima-Callao

The population of Metropolitan Lima is estimated at 7 million, comprising approximately 1,400,000 households (HH).

In 1999 it was decided that socioeconomic levels A, B and C could best be understood if they were sub-divided into two groups each (upper and lower segments). Socioeconomic level E (initially level D2) was also given a status of its own.

Prevailing Characteristics / Level	A	B	C	D	E
% of HHs (Avg.)	4.3	15.3	32.4	36.1	11.9
Place of birth of HH Leader	Lima	Lima	Lima / Highlands	Highlands / Lima	Highlands / Lima
Race of HH Leader	White	White / Mestizo	Mestizo	Mestizo	Mestizo
Education of HH Leader	University / Graduate Studies	University / Technical	Technical / Secondary	Secondary / Primary	Primary / Secondary
Years of Schooling (Avg.)	17	16	12	8.8	6.2
Children's School	Private	Private / Public	Public / Private	Public	Public
Occupation of HH Leader	Businessman Independent / Dependent Professional	Independent / Dependent Professional / Employee	Small Businessman / Skilled worker	Non-specialized employee / Unskilled worker	Temporary worker / Street vendor
Average Monthly Family Income (Mean) US\$	Over 2,800	Over 780	Over 320	230	150
Average Monthly Family Income (Median) US\$	A1:Over 5,000 A2: 2,000	B1: 900 B2: 450	C1:350 C2:210	200	130
Average Monthly Expense in Food US\$	Over 450	Over 235	150	135	105
Bank Account	90%	60%	25%	12%	8%
Number of Rooms in House (not Bathrooms)	10.1	7.3	5.5	3.9	2.8
Number of Bathrooms in House	4	2.5	1.5	0.8	0.2
Area of Residence	Residential	Middle / Populous	Populous / Marginal	Marginal / Populous	Marginal
Type of Stove	Electric / Gas	Gas	Gas / Kerosene	Kerosene / Gas	Kerosene
Ownership of Car	95%	40%	15%	1%	0%
Ownership of Refrigerator	100%	100%	85%	44%	7%
Ownership of Remote Control TV Set	100%	87%	70%	42%	16%
Ownership of Telephone	100%	95%	65%	25%	7%
Ownership of Washing Machine	A1:100% A2:95%	B1: 96 B2: 47	C1:38 C2:14	3%	0%
Ownership of PC	A1:93% A2:73%	B1:61% B2:23%	C1:7% C2:4%	1%	0%
Number of Appliances in the HH (Avg.)	29	20	13	7.4	4.4
House Maid	100%	B1:67% B2:32%	C1:8% C2:2%	1%	0%

SOURCE: APOYO Opinion y Mercado S.A./ Lima, Peru/1999

Summary Chart: Means of Transport by Attribute

Means of Transport Attributes	Combi	Custer (big combis)	Micro	Bus	Mototaxi	Colectivo	Taxi
Road Safety	The worst Drive too fast Driving style Flip over easily Body: "tin cans" Drop off anywhere	Average	More secure Slower More stable Stronger body Drop off on sidewalk	Most secure	Very insecure Flips over easily Underage drivers	More secure Big cars	Generally secure, except for the small Ticos
Personal Safety	Less theft	Theft	More theft	Theft No collector	No theft	Theft - can get off route	Risky - specially at night, except for registered and radio taxis
Speed	Very fast Drive fast Fills quickly Shorter, direct routes Compete against themselves – too many	Take longer to fill up Stop more	Slow Old Long routes Take long to fill up	Slow Large Direct route Bus stops	Fast shorter routes	Fast	Fastest and most direct
Comfort	Seated Little leg room Hunched up More people than it fits	More room Newer Can travel with packages	More room Can travel with packages More people Tom seats Bad smell	More comfortable With packages With children Cleaner	Door to door With packages	Seated Not much room	The best With packages With children Clean
Expense	Cheap Sometimes can negotiate fare Don't take half-fare or school fare	More expensive	Cheap Sometimes can negotiate fare	More expensive because fares not negotiable Saves time on direct routes and busways	Cheap	More expensive	Most expensive Worthwhile when in groups or with the family
Treatment	The worse Younger driver and collector	It depends	It depends	The best Older, more professional drivers			
Risk for Women	Seated Less risk except when only men are riding	Somewhat risky when standing and if too full	Greatest risk because of pervers	Risky when standing and if too full		Risky if only men aboard	Risky alone and specially at night, except for registered and radio taxis