

Wuhan Urban Transport Project

“A LIFETIME OF WALKING”

Poverty and Transportation in Wuhan

(Revised Draft Report – 15 December 2003)

Economic Research Institute, Wuhan University

Foreword

This report summarizes the findings of a study commissioned by the World Bank on the poverty dimensions of urban transport in Wuhan, China. The study was designed by Lucie McNeill, consultant on poverty and gender issues under the supervision of World Bank EASTR's Ed Dotson and Shomik Mehndiratta. The study was conducted and the report written by the Wuhan University Economic Research Institute's Professors Zhong Shuiying, Wei Han, Hou Weili and Cheng Dening, with field work assistance from graduate students. The authors of the report wish to thank Lucie McNeill and Li Xiaoyun of China Agricultural University for the training provided on focus group research. The assistance of the Wuhan Municipal Government's Transport Project Office is also gratefully acknowledged.

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Abbreviations and Chinese Terms

<i>CS</i>	Case study
<i>Danwei</i>	Work unit – State or collective enterprise
<i>FG</i>	Focus group
<i>FHH</i>	Female-headed household
<i>Hukou</i>	Personal residency registration
<i>Mamu</i>	Motorized or non-motorized trishaw offering rides for a fare
<i>MHH</i>	Male-headed household
<i>MLSS</i>	Minimum Living Standard Scheme
<i>MT</i>	Motorized transport
<i>NMT</i>	Non-motorized transport
<i>PRC</i>	People’s Republic of China
<i>PT</i>	Public transit
<i>RAP</i>	Resettlement Action Plan
<i>SARS</i>	Severe acute respiratory syndrome
<i>Shiye</i>	Unemployed – no registration with any employer
<i>SOE</i>	State owned enterprise
<i>Xiagang</i>	Laid-off (worker – still registered with former employer)
<i>Y</i>	Yuan, PRC currency

Executive Summary

The study makes use of existing data sets to analyze the characteristics of Wuhan's first quintile population. This information is used to select study informants. Using focus group and case study techniques, the study is able to determine first quintile transport mode use for routine and non-routine situations; priority problems with each mode are outlined and preferred improvements suggested.

Study findings are as follows:

Profile of Wuhan's poor population

First quintile population shows the following characteristics: women, seniors and young children are over-represented among the poor; migrants are more likely to be poor than permanent residents; educational attainment is relatively lower than the general population; poor families are more numerous and the dependency ratio in poor families is higher than in the general population; the poor are more likely to walk and use non-motorized transport (NMT); most people who are disabled are also poor.

The poor and transport mode use

Statistical analysis and focus groups concur on the first quintile mode use in routine situations; in order of decreasing frequency of use they are: walking; public transit; bicycle. For non-routine transport and in order of decreasing frequency of use they are: taxi; public transit; walking. It is to be noted that taxi use is due to the government's ban on trishaws and the simultaneous drop in taxis' base fare making this mode a feasible option for the poor during emergencies.

Key problems for pedestrians

Safety: increasing car traffic and traffic speed, with drivers openly flouting regulations and spotty enforcement of traffic rules, are all contributing to decreasing safety for pedestrians. In addition, because sidewalks are increasingly cluttered (kiosks, street vendors, construction, parked vehicles), pedestrians are forced onto the roadway, further increasing their exposure to risk.

Street environment and facilities: shade trees have been cut during road construction and few are replanted along new roads, exposing pedestrians to crushing heat in summer; sidewalks are not kept clean and well maintained, with garbage, missing manhole covers and other obstacles posing risks to pedestrians; street lights are either missing or not functioning; poor drainage and maintenance of sewers lead to frequent

flooding; there are not sufficient public latrines and benches for the convenience of pedestrians.

Crossings: insufficient number of safe pedestrian crossings – especially overpasses and light crossings – which forces pedestrians to make long detours in order to cross roads safely; walking light cycles are often too short; zebra crossings are not respected by motorists.

Key problems for public transit (PT) users

Design of bus routes and bus stop locations: proliferation of lines in central areas whereas peri-urban areas are underserved; bus stops shared by too many bus lines leading to bus congestion at stops; distance between stops is too great.

PT fare policies: the odd fare price and the requirement that people have exact change is inconvenient; drivers don't make change, forcing passengers to pay more; the fare policy favours those who go long distances on one line, and discourages riders who only have a few stops to go or who need to transfer to other lines; reduced fare cards for the poor and free fare cards for seniors and people with disabilities are not respected by drivers.

Driver safety and service quality: dangerous driving in order to compete for riders and maximize fare revenue (including failure to come to a full stop to let passengers off or on); discrimination against migrants and people who have access to reduced or free fare cards; failure to be of assistance to riders and to announce stops clearly; refusal to make change for riders.

Key problems for cyclists

Bike lanes and roadways: disappearance of bike lanes; existing bike lanes crowded with other vehicles; obstacles on streets and bike lanes, including missing manhole covers, and poor lighting make riding dangerous at night; poor drainage maintenance causes flooding of lanes and streets; crossing overpasses pushing bikes is resented.

Security: bicycles are routinely stolen; lack of secure and/or supervised bike parking.

Safety: drivers brush by cyclists, squeeze them against guardrails, cut in front or force them off the road; buses running into bike lanes to access bus stops at full speed; traffic police don't pay attention to safety for cyclists.

Specific issues for women

For routine trips, women's key transport mode is walking – and when they use other modes such as public transit or bicycles, they do so a lot less than men; gender differences are slight for non-routine situations. The inconvenience and cost associated with long commutes, combined with the fact that women are still mostly responsible for housework, childcare and eldercare, constrain women to employment or income earning opportunities that are within a 2 km radius of their homes. Women

were keenly aware of security issues; they feel vulnerable to theft and assault, especially at night because street lighting is poor. Women prefer overpasses to underpasses since the former are less dangerous at night when traffic is slight. Sexual harassment on buses was mentioned by some female respondents as a concern. In peri-urban areas the insufficient public transit service (short hours, few routes if any) contributes to women's exposure to insecure situations. Finally, women bring up physical barriers they face: steps onto buses are too steep and handholds on buses are set out of their reach.

Specific issues for migrants

The vulnerability and insecurity of migrants are themes that emerged strongly during focus groups. Migrants feel discriminated against as public transit users since drivers either refuse them access or charge them higher fees for carrying bundles. Migrants feel they are easy targets for exploitation or extortion if they are in any way responsible for a traffic dispute – and even in cases where they are the aggrieved party. Migrants feel they have to accept injury without compensation from drivers following accidents. Migrants feel they can't trust the authorities or the citizens to help if they're in trouble. Migrants tend to be the ones who haul goods on their backs, on shoulder poles or using handcarts and trishaws; the severe restrictions imposed by the municipality on this traffic is affecting them disproportionately. Moreover, the passenger-trishaw (*mamu*) ban had a disproportionate impact on migrants – because they were the majority of trishaw operators, and because the low fare made these trishaws a key transport mode in emergencies for poor migrants.

Specific issues for disabled people

Disabled people tend to make fewer trips – and they walk for most of their routine trips – except for ambulatory disabled people who use “disabled trishaw” (MT and NMT); for non-routine situations, they use either PT or taxis. For the visually impaired and those who walk only with special assistance, the lack of unimpeded and secure sidewalk footing as well as curb ramps is serious in Wuhan; street crossings have been planned without consideration of disabled people (sufficient time, “talking lights”, ramps etc). PT is criticized for: drivers avoid taking on passengers who have the special disabled card enabling them to ride for free; there are no automated bus stop announcements on buses (visual and audio). Restrictions on disabled trishaws brought in when *mamus* were banned are affecting disabled people negatively. Awareness of the disabled, their situations and their needs is lacking throughout society and affecting transport access, and hence opportunity.

Recommendations for improvements

1. Target investment on transport infrastructure that improves access for the poor, particularly in peri-urban areas;

2. Redesign PT routes and increase peri-urban areas' access to transit;
 3. Pedestrians should have priority when determining sidewalk occupation (by businesses);
 4. Crack down on careless drivers;
 5. Improve the street environment through plantings, lighting, street furniture, public toilets, maintenance and sanitation;
 6. Crack down on petty crime (such as bike thieves);
 7. Improve traffic regulations for, and reconsider restrictions on handcarts and trishaws;
 8. Implement a pro-poor PT fare system;
- Improve police supervision and fairness;
- Consider effective ways to involve the poor in consultations about transport management.

1. Introduction

Urban poverty is a relatively new phenomenon for the People's Republic of China. Until the first wave of economic reforms in the late 1970's and early 1980's, urban residents were for the most part the country's elite, communist party, government and state-owned or collective enterprises employees, working in administration, industry, services and manufacturing – and relatively well rewarded for the work with cash and in-kind income as well as with social benefits. A very small number of people – the “old” urban poor – were eligible for government assistance; these were people who were unable to work, were without any other income source and did not have family who could support them.

But over the past ten years, China has experienced an increase in urban poverty – the “new” urban poor – corresponding with deepening economic reforms, rationalization of state-owned enterprises, downsizing of government and greater freedom of movement for rural residents. Wuhan is no exception. Some 5% of its 7.5 million population is now dependent on government handouts and living in abject poverty, while declared unemployment now stands at 8-10%. Clearly any urban development assistance project must take this population into account during planning and implementation in order to ensure poverty reduction cross-cutting objectives are met.

The World Bank has been working with the Wuhan Municipal Government to finance an Urban Transport Project that would improve the city's road layout and its public transit system. During the course of the project's planning process, the Bank identified the need to find out more about Wuhan's poor people, their transport needs and the barriers to mobility they face. This study was designed following field visits to Wuhan, discussions with officials at the Wuhan Municipal Urban Transport Project Office and consultations with Wuhan University researchers familiar with earlier surveys conducted in the context of the project's Resettlement Action Plan (RAP). Wuhan University's Institute of Economics was selected to conduct the study and report to the Bank on findings.

The goals of the study are: to profile Wuhan's poorest, first quintile – addressing in particular gender issues, the situation of the disabled and that of rural migrants; to determine the geographic distribution of Wuhan's poorest people; to determine how the poorest people use transport; to identify barriers to mobility for the poor, and outline the consequences of these barriers; and to propose recommendations to improve access to transport for the poor.

In the early months of 2003, the study was designed, study instruments refined and

initial field work training took place at Wuhan University. Following an interruption due to SARS, training and field work resumed during the summer of 2003. It is hoped the study findings will inform the design of the World Bank's Wuhan Urban Transport Project as well as Wuhan's transport management and planning.

2. Poverty in Wuhan: Methodology, data sources and poverty profile

There is an ongoing and lively debate among development practitioners on the nature of poverty and how to measure its extent. This reflects the range of poverty concepts, from an absolute monetary measure of physical deprivation (used to determine a poverty line, for instance), to a more relative measure of social exclusion and failure to reach one's full capacity (as measured by more qualitative indicators or indexes, some of which are determined by the poor themselves using participatory processes).

In China's large cities, the deepening poverty and the increasing income gaps between rich and poor are new phenomena. The poverty experienced is both physical (low income, restricted diet, difficult access to transport, health care etc), and socio-political (educational and work opportunities, status, power, representation, voice) – poverty is multi-faceted and people are likely to define themselves as poor relative to the circumstances of others in their communities. Participatory poverty determination processes would have been particularly revealing in this emerging phenomenon of urban poverty in China and could have led to slightly different subject selection for field work. However, study limitations precluded such an approach. The study used head-count data on income poverty as a proxy for other aspects of poverty in order to draw the poverty profile of Wuhan. Following this first statistical analysis, the study then relied on qualitative methodologies to explore the poverty / transportation interface.

The nature and dynamics of poverty in Wuhan

In China, the State Council has delegated the setting of poverty lines to local governments under the regulations governing the “Minimum Living Standard Scheme” (MLSS). Once the poverty line is set, it is used to estimate the number of poor urban permanent residents (those who have official urban residency status, or *hukou*), and to determine the amount of subsidy the resident poor will receive under the MLSS. The local poverty line is calculated using expenditures which are considered essential to maintain a “socially acceptable subsistence”^①. When the per capita income of a family falls below the poverty line, the family can receive a subsidy from the Civil Affairs Bureau of the city; the subsidy paid is calculated by deducting the per capita income

^① See Hussain, Athar, 2003. Urban Poverty in China: Measurement, Patterns and Policies. ILO, Geneva.

from the poverty line.

At present, the poverty line in Wuhan is Y210 per capita per month or Y2,520 per year. If we were to use the purchasing power parity standard of 3 US dollars per day – as used by the Asian Development Bank as a poverty line in a 2001 Wuhan study – the annual per capita poverty line shrinks only marginally to Y2,283. In 2002, there were 156,410 people on income assistance under the MLSS in Wuhan’s 7 urban districts – 4.0% of the total urban resident population (see table 2-1).

Table 2-1 Categories of people receiving income assistance in 2002.

Category	Number of Recipients	Proportion (%)	Average monthly subsidy received (yuan)
No income	4,950	3.2	70
Laid-off	63,900	40.9	57
Retired	12,010	7.7	58
Unemployed	47,150	30.1	68
Working poor	9,400	6.0	54
Other	19,000	12.1	68
Total	156,410	100.0	62

Sources: Wuhan Statistical Bureau, 2002.

Unemployment is now the major determinant of urban poverty. The unemployed are divided into two administratively distinct groups in China: laid-off workers from state-owned enterprises (SOE) – in Chinese *xiagang* – because there is no work for them at their factory, they are not being paid but they are still “on the books” as employees; and the officially unemployed – in Chinese *shiye* - who may have had work in the past, but are not presently “on the books” as employees of any enterprise or government unit. At present, 71% of Wuhan’s abject poor who qualify for income assistance are *xiagang* and *shiye* workers. Only 1% of MLSS recipients in 1996 were *xiagang* workers; by 2002, they had grown to 41% of recipients (see Table 2-2). It is to be noted that rural migrants to Wuhan do not qualify for MLSS and are not covered in these data.

Table 2-2 Income Assistance Recipients in Wuhan – 1996 to 2002

	No income	Laid-off workers	Retired	Working poor	Unemployed	Other	Total
1996	442	31	307	509	1204	694	3187
2000	624	3117	954	1182	4578	1863	12318
2002	4950	63900	12010	9400	47150	19000	156400

Source: Wuhan Civil Affairs Bureau, 2003

The key causes to this increase in urban poverty in Wuhan over the past ten years are the economic reforms which forced unprofitable SOEs to restructure through mergers, layoffs or closure and the changing economy of Wuhan due to these reforms – leading to a decline in heavy industry.

Aside from increasing poverty, there has also been a rise in income inequalities in Wuhan, as illustrated in table 2-3 and figure 2-1 below.

Table-2-3 Average monthly income distribution, Wuhan (2000-2002)

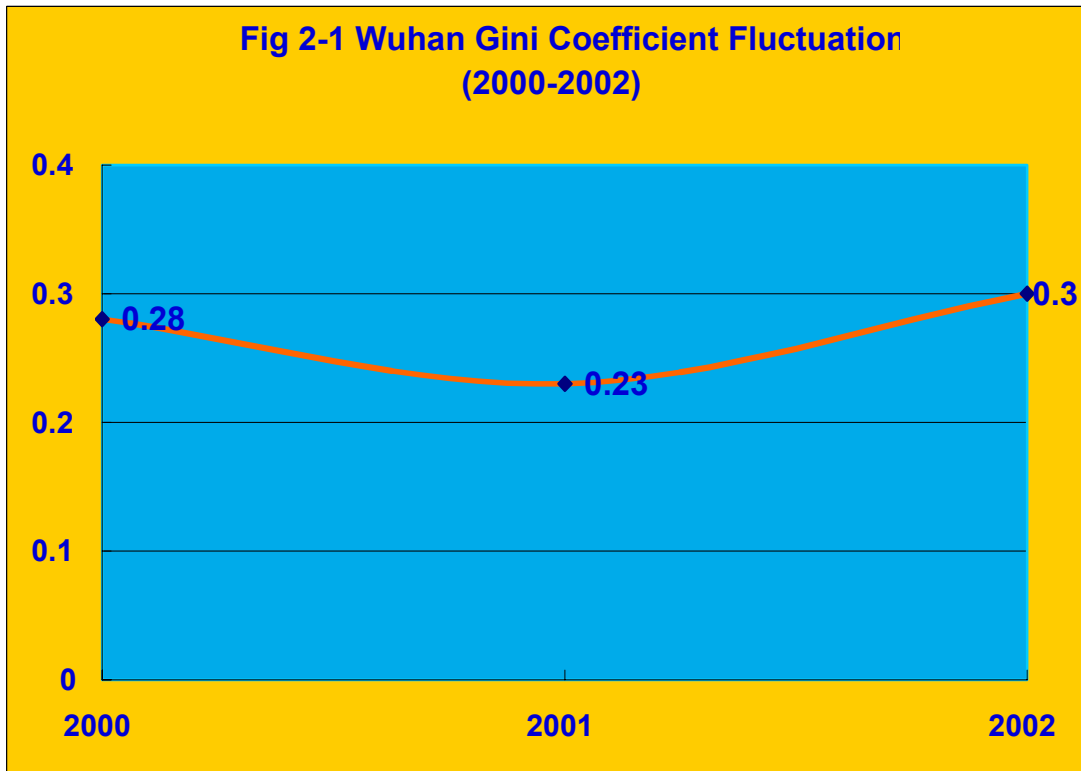
Yuan

	2000	2001	2002
First quintile	248.95	252.88	259.28
Second quintile	377.13	394.49	397.37
Third quintile	477.45	513.20	528.17
Fourth quintile	603.05	678.55	720.86
Fifth quintile	844.41	1101.13	1274.01

Source: 1.the Wuhan statistics yearbook(2002), the China statistics press.2002.7.p336.

2.the Wuhan statistics yearbook(2001), the China statistics press.2001.7.p386.

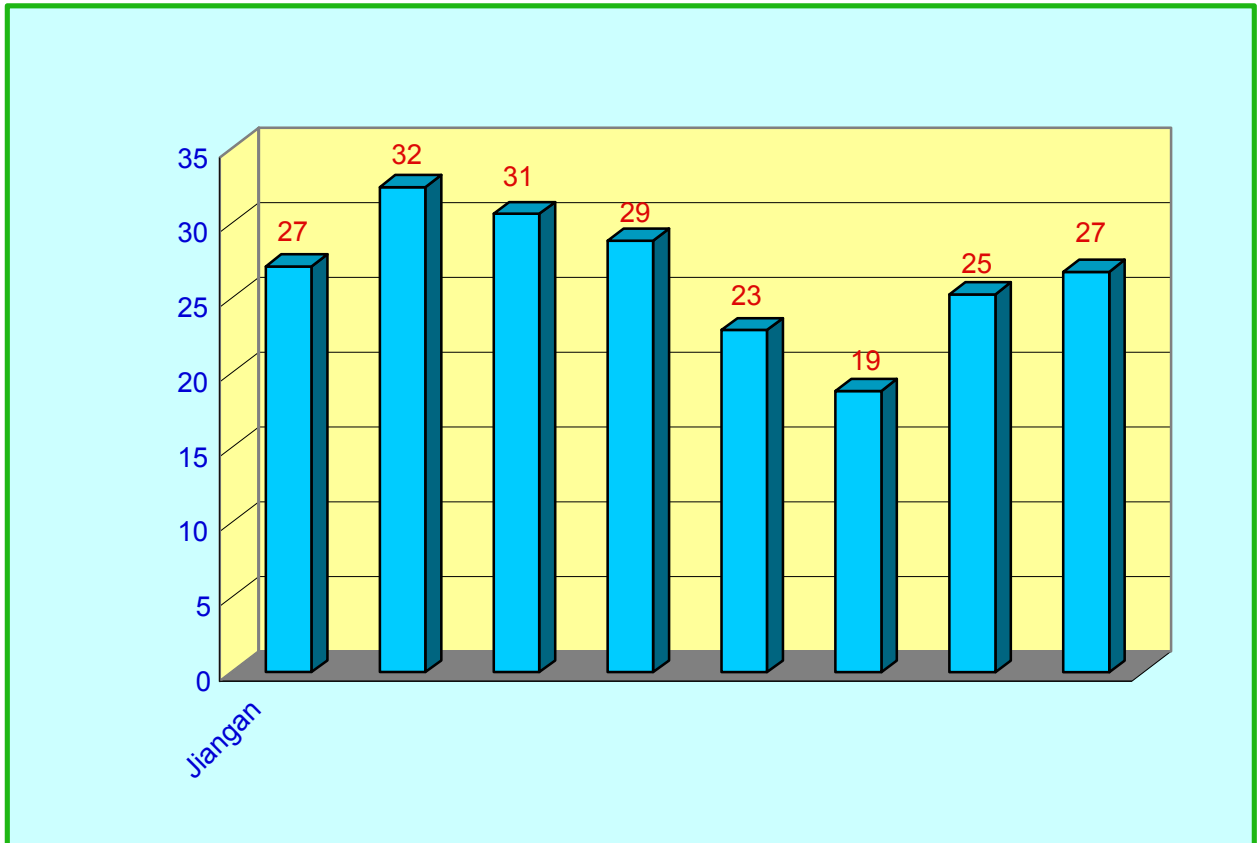
3.the Wuhan statistics yearbook(2000), the China statistics press.2000.8.p404.



Source: Wuhan Statistical Yearbook – 2000, 2001, 2002.

The Gini coefficient calculated for 2002 (0.29596) is the largest to date, indicating the widest income gap to date in Wuhan.

In order to fully illustrate the changing nature of urban poverty, we must include the rural migrant population that has flocked to Wuhan over the past twenty years, searching for opportunities and a better quality of life. This is due in part to a loosening of administrative controls over people's movement, as well as improvements in communications and transportation. Wuhan, as the largest economic, political, and cultural center in central China, is both a transportation hub and a magnet for people seeking a better life. The 2000 indicates that migrants now exceed the 1 million mark – roughly 13% of Wuhan's total 7.5 million population; 849,000 (85%)



of those migrants had been living in Wuhan for over 6 months. Earlier studies of migrants conducted in Wuhan have revealed that 80% of the migrants are peasants and their dependents; they are working mostly in commerce and industry^①. As indicated in Figure 2-2, Jiangnan and Qiaokou have the largest proportion of migrants. Census data also reveal that a large majority of migrants in all districts are men.

Hussain (ILO, 2003) examines the situation of urban migrants with respect to poverty; he presents comparative poverty rates between permanent residents and migrants in 31

^① Su Zhongsui, 1996. "Research on Wuhan's Migrant Population and Employment"

Chinese cities. In general, poverty rates among migrants are 50% higher than for permanent residents. In the case of Wuhan, Hussain reports 6.3% of permanent residents living below the poverty line, while 15.1% of migrants are living in poverty. It is therefore expected that migrants will be over-represented among the first quintile in Wuhan.

Study methodology

Step 1: Drawing a profile of Wuhan's poor population.

Using existing data, key characteristics of Wuhan's poor are outlined; their distribution throughout the city is determined. This initial data analysis allows for the identification of key sub-groups among the poorest quintile – thereby enabling the research team to select focus group participants that are representative of these sub-groups. The profile of Wuhan's poorest quintile is presented later in this chapter.

Step 2: Exploring the poverty/transport interface.

In order to find out more information on how poor people use transport, what problems they encounter and their wishes for improvement, we used focus group and case study methodologies. We devised a focus group plan that allowed for the most part for separate male and female groups – thereby enabling us to draw gender differences in use, need/problems and preferences. In some cases, participants were separated according to their residence in central or in outlying districts in order to find out whether or not people in peri-urban areas encounter specific problems. We also ensured key sub-groups of the poor (working poor, unemployed, migrants, seniors, recently resettled people) were grouped together to allow for their specific issues to surface. Focus groups were organized in each of Wuhan's seven urban districts. The methodology used to design focus group composition, select participants and draw out relevant issues is explained later in this chapter. The results of the focus group investigation are presented in Chapters 3 and 4.

The issues particular to people with disabilities were explored using a case study approach; this was necessary due to the logistical difficulties of organizing focus groups with disabled people in Wuhan. The issues specific to each key sub-group among the disabled (physically disabled, visually impaired, hearing impaired and mentally disabled) were studied through individual interviews with male and female subjects, and in some cases with the assistance of family members. The findings from our case studies with disabled people are presented in Chapter 5.

Step 3: Recommendations.

Largely based on the content of focus group and case study research, the team analyzed

poor people's own views on access to transport, and their preferences regarding ways to improve transport delivery. The recommendations put forward are therefore based on the poor's own suggestions and are presented in Chapter 6.

Existing data and research needs

Statistical data were needed to establish the key characteristics of the first quintile, in order to better understand who in Wuhan is more likely to be poor, and to be able to better design our focus group research component. Existing data sources in China do not lend themselves easily to poverty analysis. Census data in China, and this includes the 2000 Census for Wuhan, do not include key income variables – we cannot use it directly to analyze the socio-economic characteristics of the poorest, first quintile (20%) of the population which is one of the objectives of this study. However, income was included in the fairly large Resettlement Action Plan (RAP) survey conducted for the World Bank Wuhan Urban Transportation Project in 2001-2002. There is also fairly good headcount data on the clients who receive the Minimum Living Standard Scheme (MLSS) subsidy – these are Wuhan's poorest of the poor, permanent residents whose income is below the poverty line.

We chose to extend our analysis to the poorest quintile of the total urban population – permanent and migrant – and therefore describe the interaction between poverty and transport for a more significant segment of the population.

The specific data sources used for the study are:

Wuhan Civil Affairs Bureau statistics on permanent residents receiving the MLSS subsidy. These data cover only 4-5% of the permanent urban population but are geo-specific, since living subsidies are distributed by neighbourhood committees in all of the 7 urban districts and for each of the 85 sub-districts or neighbourhoods. These data are therefore key to an eventual mapping to illustrate the geographic distribution and concentration of poverty in Wuhan. In addition, municipal records are available as time-series and allow for a look at poverty trends in the city. However, the Civil Affairs Bureau only keeps a head-count of subsidy recipients – the data set lacks the variables necessary to determine any other characteristics of the urban poor.

The large-scale household survey conducted in 2001 and 2002 by the Wuhan Urban Transport Project Resettlement Office for the formulation of the project's "Resettlement Action Plan" (RAP). This survey collected data from 5,393 households, and includes information on demographics, income and transportation. The sample drawn in the course of the survey is a cluster sample, not a random sample, and therefore not as representative of the general population. Indeed data analysis reveals relatively

wealthier groups are over-represented in this sample but due to built-in incentives (giving preference for the poorest in terms of compensation and replacement housing), self-reported income is under-reported. However, since the income variable in this case was only used to perform factor analysis, this problem is not deemed prejudicial to the analysis. For a further discussion of the characteristics of the RAP sample, see Annex 1.

The 2000 Census for the City of Wuhan. The most glaring omission in the census relates to income. But there are three features of the census which are key to this study: (1) The census contains the most detailed data available on geographical distribution, age, sex, and occupation for the population in Wuhan. By using factor analysis on the RAP data and finding the census variable that is most closely correlated to income, it is then possible to use the census data to define key characteristics of the lowest quintile. (2) The census data include information of Wuhan's migrant population. (3) The census was conducted in the latter months of 2000, so the information is current. While all households are surveyed using the basic questionnaire during the census, a significant sub-set responds to more detailed questions; the size of this sample, the objective nature of the variables collected (sex, age, education, household size etc), the absence of more sensitive variables such as income, the random checks on data collection and the relatively small random error make this data set reliable and representative.

In order to maximize the information available in the three data sets, the research team adopted the following approach: the correlation between income levels of city residents and their living conditions was analyzed by using the data from the RAP survey. Once a high correlation between income and a living condition variable which is included in the census is established – and once this correlation proves to be robust statistically – then the living condition variable can be used to divide the census sample into quintiles.

Our analysis revealed that there is indeed a high and robust correlation coefficient between dwelling size and income. This variable was therefore used to draw the first quintile sub-sample and analyze its characteristics. Findings of this analysis are presented below and a more detailed discussion of the correlation analysis and of Wuhan's poverty profile is presented in Annex 1.

Characteristics of Wuhan's first quintile

From the analysis of existing data sources, we were able to draw the following profile of Wuhan's first quintile:

Poverty is closely related to sex. Generally speaking, women are more likely to be poor. This is largely due to the concentration of women in jobs that pay less – in part due to lower education and skills, but in part due to sex discrimination and increasing wage gaps between men and women.

Poverty is closely related to age. The older people are, the more likely they are to be poor. The factors contributing to this are: older people are more likely to have dependents – both their old parents and teen-aged children who are not yet earning an income; pensioners may find their pension income shrinking due to inflation or the inability of the enterprise to pay this pension benefit.

The educational attainment of the poorest quintile is relatively low. But it is far from clear whether low schooling leads to poverty or vice versa. One assumption is that this is a vicious cycle: on the one hand poverty leads to low educational level; on the other hand, low educational level guarantees employment in low-skill, low-pay sectors.

The poor are likely to have larger families. The income earner in the family bears a heavier burden than people with smaller families (larger dependency ratios) – especially as the real costs for health and education have been off-loaded from the state or the work unit to the individual.

Poor people are less likely to be involved in technical or managerial occupations. These occupations in general require more education and are better remunerated.

While all poor people are not disabled, the vast majority of disabled people are poor.

Focus group methodology and design

Existing data provide very little information on current transport patterns of the poor, the reasons for these patterns, the costs incurred by the poor as a result of difficult transport access, and the preferences the poor may have for transport improvements. A focus group (FG) is a semi-structured discussion among 6-10 people facilitated by a neutral outsider; FG discussions are recorded anonymously and content is analyzed systematically. Focus group discussions allow for rich information to be revealed when the participants are chosen from relatively homogeneous groups, the discussion is properly moderated and the participants are confident the views they express will not be held against them. The methodology lends itself to the kind of complex information our study was seeking.

The composition of the FGs was only determined once the poverty profile of Wuhan was drawn – this was to ensure that our FGs reflected the various sub-groups among Wuhan's first quintile. Once this analysis was completed, we structured the FGs in such a way as to ensure participants were drawn from all seven of Wuhan's urban districts, that they were divided for the most part between men and women, that they were composed of some of the identified first quintile sub-groups (migrants,

unemployed, etc), and that we had a good representation of peri-urban residents' FGs. These FGs were organized around categories of poverty – hence we called them “vulnerability-driven FGs”. In addition, we hypothesized that poor people who earn income through transportation – be they porters, handcart operators or trishaw drivers – would face distinct situations and have specific transport needs; therefore, we designed distinct FG protocols for what we called “mode-driven groups”. FGs conducted for this study were held from July 28, 2003 to August 28, 2003. Eighteen FGs were held – two of them were mode-driven groups; 115 people took part (64 men, 51 women) (see Tables 2-4 and 2- 5 below for a summary of the FG design).

The mode-driven group participants were drawn from people who work around a large wholesale market in central Wuhan, the Hanzheng Street market. Unlike most of the vulnerability-driven groups, the mode-driven groups were conducted with male and female participants; this is because the issues to be drawn in the context of these discussions were more tightly related to occupation and were felt to be gender-neutral. However, in the case of the vulnerability-driven groups we wanted to explore whether specific problems were more likely to be encountered by women than by men; we therefore sex-disaggregated those groups (for organizational reasons, the two FGs composed of seniors were not divided between men and women).

FG participants were selected with the assistance of civic authorities – ensuring they were indeed in the first quintile and in addition fit other FG requirements. Beyond assistance with initial selection, these authorities (neighbourhood committees, SOE *xiagang* registration authorities, senior citizens' centres etc) were not involved nor did they assist in any of the discussions; they were not apprised of recommendations made. In some cases and as much as possible, participants were recruited directly by the researchers.

The facilitation teams were trained in FG techniques and the FG protocols were field-tested and revised several times in order to ensure the information sought would be captured (FG protocols can be found in Annex 4). All FG protocols were organized along a common plan: determine the routine and non-routine travel patterns of the group; discuss and rank the problems encountered by the group; and propose and rank possible solutions to the problems outlined. This common plan then allows for the compiled summaries of FG discussions to be analyzed for content and compared among various categories.

Table 2- 4 Mode-driven Focus Groups: location and participants

Wuhan Urban District:			Qiaokou
Mode-driven groups	Walking (Freight-carriers using backs, poles, handcarts)	Total (Male: Female)	Hanzheng st. 6 (5 : 1)
	Bicycle, Motorcycle (freight-carriers)	Total (M : F)	Hanzheng st. 7 (5 : 2)

Table 2- 5 Vulnerability-driven Groups: location and participants

Vulnerability driven group		Jiangan	Jianghan	Qiaokou	Hanyang	Wuchang	Qingshan	Hongshan
Working Poor	Male	Chezhan s.t. (central) 5					Wugang (peri-urban) 6	
	Female	Chezhan st. (central) 6					Wugang (peri-urban) 6	
Unemployed	Male				Qinduankou (peri-urban) 6	Wuzhong (central) 10		
	Female				Qinduankou (peri-urban) 6	Wuzhong (central) 10		
Migrants	Male					Guangbutun (peri-urban) 6		Luxiang (central) 6
	Female					Jiedaokou (central) 6	Tieji village (peri-urban) 6	
Seniors	Male		Wansong St. 6					
	Female		Wansong St. 6					
People who have been resettled	Male		Youyi Rd. 4					
	Female		Youyi Rd 6					
Total number of FG – Participants (M:F)		2 – 12 (6:6)	4 – 22 (10:12)	2 - 13 (10:3)	2 – 12 (6:6)	4– 32 (16:16)	3– 18 (6:12)	1 – 6 (6:0)
15								

2.6 Case study methodology for disabled participants

Exploring the transport issues of poor disabled people presented special challenges. The unemployed, and those who have more severe disabilities are widely distributed throughout the city. Some among the disabled face special communication barriers (the hearing impaired, the mentally disabled). This is why the research team adopted a case study approach in order to illustrate the specific problems encountered by each sub-group. Eight people (4 men, 4 women) were selected with the assistance of the Wuhan Disabled People’s Association; they were chosen according to their disability and interviewed individually. Disabled subjects live in Jiang’an district and were interviewed at the offices of the Jiang’an Disabled People’s Association. Information on case study subjects is summarized in Table 2-6 below. The Case Study Guide can be found in Annex 4.

Table 2-6: Disabled Persons Case Studies

Disability type	Male	Female	Total
Physical Disability [®]	1	1*	2
Visual Impairment	1	1	2
Hearing Impairment	1	1	2
Mental Disability	1	1	2
Total	8		

* This subject is both physically and mentally disabled.

2.7 Characteristics of Study Participants (FG and CS)

Based on a short questionnaire answered by all participants prior to the discussions or interviews on transport, we draw the following profile of our sample population:

Self-declared income level of participants falls mostly within study guidelines: 64% are first quintile, 20% second quintile and 16% third. Given the reluctance to admit to poverty in China, it is safe to assume that the sample as a whole falls mostly within the first quintile.

The dependency ratio (number of dependents per income earner in a household) is 2.1, with men having more dependents on average (see Table 2-7 below).

The average Engel coefficient of for participant households is 56.5% (up to 59.6% for female participant households); this indicates participant households are indeed poor in that they spend over half of their income on food and other bare necessities. This is much greater than the Engel

[®] Physical disability includes most disabilities that affect mobility: paraplegics, quadraplegics, amputees, people with cerebral palsy, etc.

coefficient for the general population in Wuhan, which is 38.05%.

The proportion of income spent on transportation expenses is 7.61 % (9.58% for women, 5.52 for men).

Of the study participants, 43% do not own any means of transportation, 42% have bicycles, 11% have trishaws (of various types) and 3% own motorcycles.

Table 2-7: Support Ratio, Engel Coefficient, Gini Coefficient, and Ratio of Transport Expenses of Poverty-Stricken Population

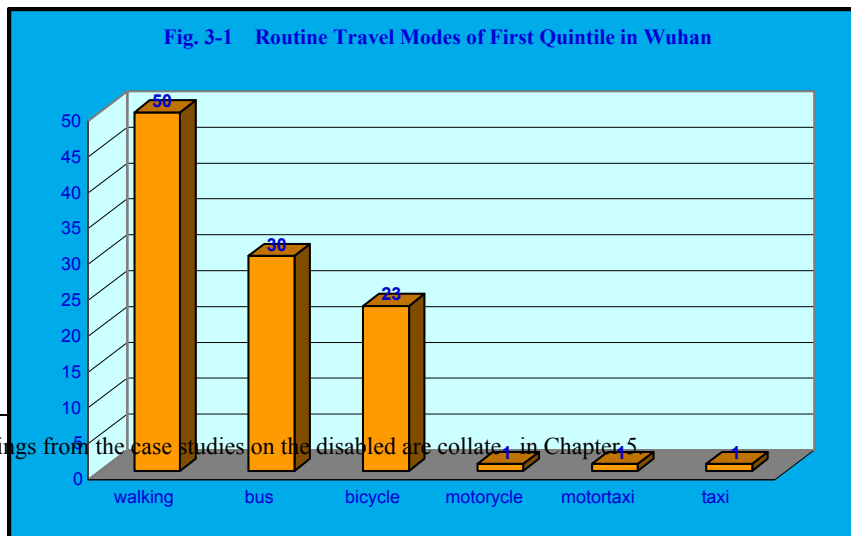
t	Dependency Ratio	Engel coefficient	Proportion of income spent on transportation
Poor	2.15	56.50	7.61
Female poor	2.08	59.60	9.58
Male poor	2.23	53.10	5.52
Disabled	1.41	46.50	4.78

3. How the poor get around in Wuhan: Routine and non-routine trips^④

The current major transport modes in Wuhan are: walking, handcarts, bicycle, trishaws (non-motorized and motorized), motorcycle, moto-taxis (motorcycle riders offering rides for a fare), car, taxi, micro-bus (unregulated 10-20 seat van), *danwei* bus, public buses and ferries. In our FG discussions, we were guided by what participants felt was important to discuss. The means of transportation they most often rely on are the ones that are therefore discussed in the study, namely walking, bicycle, moto-taxi, public buses and taxis. In addition to these, we include discussion on the now banned tri-shaws (tricycles, motorized or not, that offered rides for low fares); the ban on tri-shaws has had an impact on the public and of course on the low-income residents and migrants who operated them. Content analysis of the FG discussions is presented in Annex 3; all FG discussion summaries are presented in Annex 5.

3.1 Routine trips made by Wuhan's poorest quintile

During focus groups, participants ranked the transport modes they use most often for routine situations. The mode used most frequently was given a score of 3, second most used the score of 2 and least used the score of 1; hence the mode that garners the most points is the most used (See table 3-1: Rankings – Routine Transport Modes). The most commonly used means of transportation for the poor in Wuhan are the following three (arranged in decreasing order of usage frequency): walking, public transit, and bicycle. (See fig. 3-1).



^④ Findings from the case studies on the disabled are collated in Chapter 5.

Table 3-1: Rankings – Routine Transport Modes

	Walking	Public transit	Bicycle	Motorbike	Moto-taxi	Taxi
Mode –driven groups						
<i>Walking for work: freight-carrier and handcart operator</i>	3					
<i>Bicycle, Tri-cycles(MT, NMT) freight carriers</i>	3	2	1			
Vulnerability-driven groups						
Working Poor – Central – Female	3	2	1			
Working Poor, - City Central – Male	3	2				
Working Poor – Peri-urban – Female	3	1	2			
Working Poor – Peri-urban – Male	2	1	3			
Unemployed – Central – Female	3	2				1
Unemployed – Central – Male	3	2	2		1	
Unemployed – Peri-urban – Female	3	2	1			
Unemployed – Peri-urban – Male	1	3	2			
Migrants – Central – Female	3	1	2			
Migrants – Central – Male	3	1	2			
Migrants – Peri-urban – Female	3	1	2			
Migrants – Peri-urban – Male	2	3	1			

	Walking	Public transit	Bicycle	Motorbike	Moto-taxi	Taxi
Seniors (1)	3	2	1	1		
Seniors (2)	3	2				
Resettled – Female	3	2	1			
Resettled – Male	3	1	2			
Total	50	30	23	1	1	1

Walking: the major transport mode for the poor in Wuhan

Under the planned economy, Wuhan developed just like other cities in China; urban planning and the building of neighbourhood schools, health facilities and recreation centres were based on the location of the *danwei* – state or collectively owned enterprises involved in government, industry, manufacturing or services. The *danwei* provided its workers and their families with housing, health care, schools or daycares, recreation centres and other services (food shops etc). In pre-reform China, workers never needed to stray very far from their *danwei* to get their basic needs met. This system has now been largely dismantled, but due to a slow development of the real estate market, old residence patterns still hold.

During FG discussions, participants insist that their lives are very convenient. They can find everything they need nearby, so walking out to do errands is seen as normal, practical and economical. Most daily shopping, taking their children to school and other routine tasks take place within a 2 square kilometer area. However, the scope of activities open to the poor may be restricted by the fact that they must happen within this range. Participants stated that what they lack is money, but they have plenty of time – walking may be more time consuming, but it's free.

Public transit (PT) – Second choice, especially when distances are greater

The PT system in Wuhan includes the now privately-owned Wuhan Public Transport Group (WPTG) comprising 8 subsidiaries, and the Wuhan Hengtong Company (a foreign-owned enterprise). The entire transit system comprises 248 bus lines and 21 mid-distance lines, served by a fleet of 5, 621 large buses and 464 medium-sized buses – 16.3 buses per 10 thousand people. Ridership totals 750,000 person/trips per day.

PT is the mode of choice for poor people when greater distances must be covered. The bus system has been operating on a one-ticket system with no free transfer provided between lines; the fare is set at prices that vary from 0.5 to 2 Yuan, depending on the specific line, the distance it covers and the quality and comfort of the vehicles. Bus lines average 18 km in length, with several covering 40 km.

The fare system therefore favours long-distance passengers; for local riders who need to transfer to other lines or who only need to go one or two stops, the fare can be onerous.

FG participants indicated that, although public transit (PT) is their second mode of choice, they only ride the buses if they must. The fare level – while low for higher income residents – is high for people living near the poverty line.

Bicycling – Third choice - for those who own one

New bicycles are affordable in Wuhan (150 Yuan or half the minimum living standard subsidy), and second-hand bikes sell for only a fraction of that. Bike riding is mostly free, although maintenance and supervised parking can cost a little. Bicycles are also versatile, allow the rider to make multiple stops without increasing trip cost (unlike PT), and can take the rider to narrow lanes and alleys where larger vehicles can't go. Traffic jams rarely affect bike riders. However, both FG discussions and statistics show that while the bicycle is the transport mode that poor people are the most likely to own, the ease with which bikes get stolen in Wuhan is now a key barrier to the first quintile using them to a greater extent.

Analysis of mode rankings

Walking – the influence of gender roles on mode use

A sex-disaggregation of focus group rankings for mode use reveals that women are more likely than men to state walking is their primary mode. Among poor men, walking is also a top choice, but the unemployed, migrants and working poor living in peri-urban areas put walking second or third. (See table 5-2 – 3 indicates top choice, 1 last choice)

Table 5-2: Sex-Disaggregation of Transport Mode Rankings

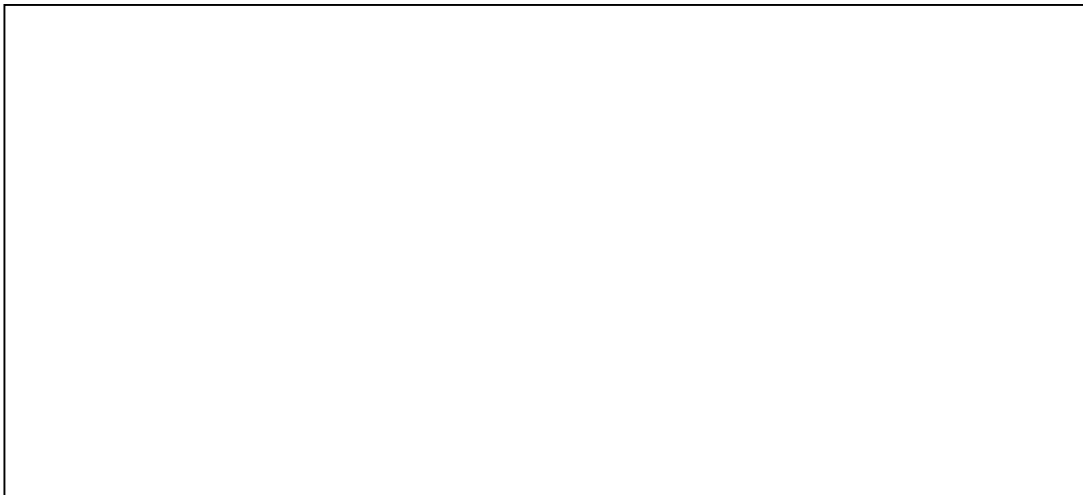
	Walking (M/F)	Bicycle (M/F)	Public transit (M/F)	Motorcycle (M/F)
Unemployed, central	3/3	1/0	2/2	0/1
Unemployed, peri-urban	1/3	2/1	3/2	
Senior *	3/3	1/0	2/2	0/1
Resettled	3/3	2/1	1/2	
Migrant, central	3/3	2/2	1/1	
Migrant,	2/3	1/2	3/1	

	Walking (M/F)	Bicycle (M/F)	Public transit (M/F)	Motorecycle (M/F)
peri-urban				
Working poor, central	3/3	0/1	2/2	
Working poor, peri-urban	2/3	3/2	1/1	
Total	20/24	12/9	15/13	0/2

* The two seniors' FG were not segregated between men and women because of logistical reasons, but the rankings presented are derived from those obtained from individual participants during the course of the discussion.

The gender difference may be due to women's weaker control of household resources, combined with household opportunity cost. In general, women have had more difficulty competing in a market-oriented labour force; they are often the last hired and first fired – in part due to lower educational attainment and skills, but also due to traditional discrimination. In addition, women earn less than men in China's cities, and the wage gap is increasing. Female study participants are mostly middle-aged (30 to 50 years old), with low educational achievement and few marketable skills in a post-reform China. It is therefore rational for households to invest scarce resources in men's employment (job search, informal job market etc), including using more expensive means of transportation to get to work or market.

Women study participants who are unemployed have little money and restrict their activities to the house and the neighbourhood. Many of the female participants are working in the informal sector, as babysitters, cleaners or street vendors – this is especially the case for migrant women. These are often part-time jobs offering the lowest income. It is also unstable employment, likely to be terminated with little notice. Poor women, whether working or not, tend to assume traditional gender roles, taking care of household, child care and elder care work. In order to fulfill these responsibilities, they state they have intentionally chosen work that is located close to home. They feel it's not worth it to take a job that requires a long commute, since the jobs they are able to get pay poorly and the public transit fares are too onerous – especially if several transfers are necessary.

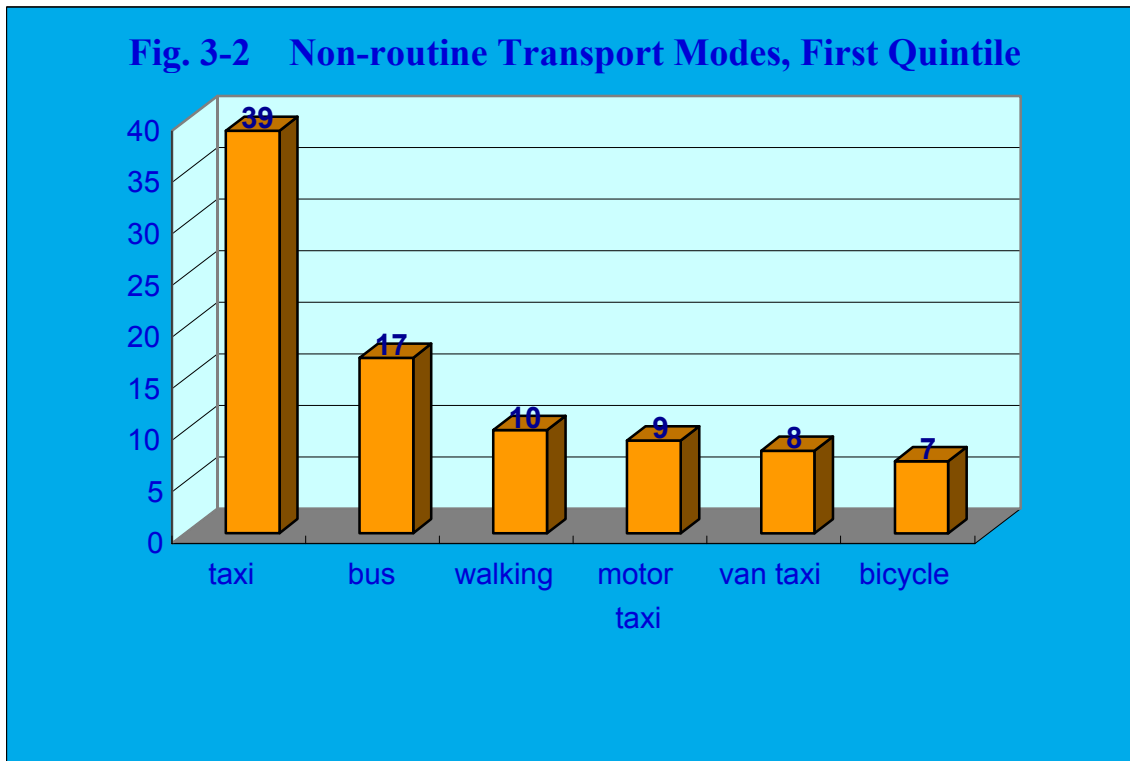


3.1.4.2 Mode choice is dictated by ability to pay

Because money is scarce, poor people have a restricted set of transport options. The trade-offs wealthier people make – paying money for the best transportation possible in order to reduce the inconvenience, discomfort and time spent in transit – are not open to the poor. Poor people limit the scope of their trips to what is within walking distance (2-4 km), or choose the cheapest transport mode available such as bicycles, PT and moto-taxis; the price they pay is not monetary – it is their time, their energy, their safety, their comfort and their convenience. PT, the second mode choice for the poor, is less than optimal because bus rides tend to be time-consuming, tiring (especially in hot weather when cheaper buses are crowded and have no air-conditioning), can be unsafe (especially at bus stops during rush hour), are mostly uncomfortable (cleanliness, availability of seats, condition of the rolling stock) and can be inconvenient (distance between stops, waiting time between buses, design of routes, need to transfer). Participants indicated that they would love to be able to ride taxis instead; they are fast, comfortable, clean, safe and can pick you up anywhere and take you exactly where you want to go. But taxis are much less affordable than walking or bicycling or PT. Price is the main determinant of mode choice.

Non-routine transport for Wuhan's poorest quintile

Non-routine trips involve travel necessary for rare, sporadic and emergency situations, such as going to the doctor, calling on friends on holidays, accessing local recreation



events or facilities. The results of the FG discussions indicate that people in the first quintile choose, in decreasing order of use frequency taxis, PT, walking. (See Fig. 3-2, and table 3-3.)

Table 3-3: Rankings – Non-routine Transport Modes

	Walking	Public transit	Bicycle	Moto-taxi	Taxi	Microbus
Mode –driven groups						
<i>Walking for work: freight-carriers and handcart operators</i>	1	3			2	
<i>Bicycle, tricycle (MT, NMT) freight carriers</i>		2	1		3	
Vulnerability driven group						
Working Poor – Central - Female					3	
Working Poor – Central – Male		1		2	3	
Working Poor –	3				3	

	Walking	Public transit	Bicycle	Moto-taxi	Taxi	Microbus
Peri-urban – Female						
Working Poor – Peri-urban – Male		1			2	3
Unemployed – Central – Female	3	2			1	
Unemployed – Central – Male	3	2	2	1		
Unemployed – Peri-urban – Female		2	1		3	
Unemployed – Peri-urban – Male					3	2
Migrants – Central – Female				3		
Migrants – Central – Male		3				
Migrants – Peri-urban – Female			3	1	2	
Migrants – Peri-urban – Male		1			2	3
Seniors (1)					3	
Seniors (2)					3	
Resettled - Female					3	
Resettled - Male				2	3	
Total	10	17	7	9	39	8

Taxis: the preferred option for emergency situations

In routine situations, poor people don't take taxis to get around. But taxis are the first preference in emergency situations – and only if other options are not possible. Respondents indicated that as much as possible, they walk or bicycle to the hospital; and poor people only go to the hospital in the case of serious illness. If the hospital is located too far away, they take the bus during the daytime, and a taxi if the emergency occurs at night and no bus is available. Respondents also indicated that they are judicious in their use of taxis; they are willing to take a cab for distances of 4-8 km involving a fare of Y20-30.

Taking taxis is such an onerous expense that respondents remember clearly how much they have spent on cab rides. FG participant Y.Y. remembers that last year, the taxi ride to take his wife to hospital after she had suffered a stroke cost them Y26. And Z. J. stated that earlier this summer, sending his mother to and from the hospital by cab cost him Y42.

Migrants are less likely to take taxis

While first quintile permanent residents take taxis for emergencies despite the expense, this is not the case for migrants. Unless an illness is serious, migrants do not go to the hospital; if at all possible, they walk or bicycle to a local walk-in clinic where treatment is more affordable. Respondents indicated that some migrants take to their beds and wait for the illness to pass – anything to avoid the cost. Only when it's absolutely necessary do they access formal health care, and in those cases, they choose to use the cheaper moto-taxis, minibuses or bicycles. For example, FG participant C. J. says before the trishaws were banned, this was the preferred mode in an emergency; following the ban, their only alternative is the moto-taxi.

Non-routine activities for migrants include returning to their hometown for major holidays such as New Year or having to rush to work. Unless the trip is an emergency, they use the cheaper transport modes such as buses, moto-taxis and minibuses. Participant W. L., a migrant working in a textile mill, says she would take a moto-taxi if she were to be late for work. L. J. is working in Wuhan as a freight-carrier. Last spring when an older brother got bleeding ulcers, it cost him Y200 to take his brother to the Army Hospital by cab from their house in Gutian and back.

Emergency transport mode choice indicates that although both permanent residents and migrants are poor, migrants have even fewer options open to them – they are worse off than permanent residents.

Gender differences are slight for non-routine trips

While gender differences were appreciable in the case of routine trips, it would appear that in non-routine situations men and women are at liberty to make similar choices given household assets.

Barriers to transport for Wuhan's poor: Challenges and consequences

Focus group research allows groups to voice their views on given issues – it also allows the group to rank issues or preferences – thereby providing researchers with prioritized “shopping lists” . In Table 4-1 below, the findings are presented in snapshot form to give the reader a sense of the breadth of issues discussed – and allow for broad themes to emerge. A full explanation of the participants’ views is presented in the further sections of this chapter.

Table 4-1 Summary Findings

<i>Subject Group</i>	<i>Issue Category</i>	<i>Detailed Issue</i>
Combined population	Transport Infrastructure	Insufficient maintenance of secondary roads in city centre, and all roads in peri-urban areas; Street environment needs improving: trees, furniture, restrooms, garbage collection; Inconvenient and unsafe crossings for pedestrians; Design of bus routes and distance between bus stops need revisions to increase rider convenience; Bike lanes and protected bike parking are needed to encourage riders.
Combined population	Traffic Safety	Pedestrians are not sufficiently protected from vehicles on sidewalks, at bus stops, along roadsides and at crossings; Proliferation of competing bus routes in city centre leads to buses jostling and erratic driving; Lack of prompt action on traffic hazards such as missing manhole

<i>Subject Group</i>	<i>Issue Category</i>	<i>Detailed Issue</i>
		covers, open construction pits etc.
Combined population	Traffic Regulations, Enforcement and Management	<p>Pedestrians' priority access to sidewalk space is not enforced;</p> <p>Police do not focus sufficiently on the safety of pedestrians and bicycle riders;</p> <p>Arbitrary enforcement of traffic regulations on the part of police;</p> <p>PT fare structure and policies need to become pro-poor – PT fares are now a barrier to opportunity for the poor;</p> <p>Transport decision-makers do not consult sufficiently poor people.</p>
Resident of peri-urban areas	Infrastructure and service	<p>Poor road maintenance, lack of sidewalks, lighting, efficient drainage;</p> <p>Insufficient and poor quality PT service;</p> <p>Insufficient access to emergency, non-routine transport.</p>
Migrants	Access to transport	<p>Migrants are less likely to use PT or taxis for transport than residents;</p> <p>Discriminated against by police, bus drivers, drivers and resident citizens;</p> <p>Disproportionate impact of ban on taxi trishaws (<i>mamu</i>) and restrictions on trishaw and handcart daytime traffic – policies need to be reconsidered.</p>
Women	Access to safe transport	<p>Women are more likely to walk than men;</p> <p>Poor lighting of streets, bus stops increase vulnerability of women to assaults; non-commercial underpasses (badly lit and deserted at night) are a barrier to women;</p>

<i>Subject Group</i>	<i>Issue Category</i>	<i>Detailed Issue</i>
		Inappropriate infrastructure design (high steps, hard to reach handholds, distant crossings, steep overpasses making bike pushing arduous etc) increase inconvenience and reduce safety.

4.1 General views of the first quintile on transport in Wuhan

Wuhan’s municipal government has been spending a significant portion of its budget on transportation improvements over the past decade, with investments reaching over one billion Yuan in the last two years. The resulting changes have been tangible. Our FG participants’ overall assessment is that transportation has greatly improved with the widening of roads, increased traffic flows and better infrastructure. However, they also feel the authorities need to focus on problems that are actual barriers to mobility and opportunity.

Transport infrastructure

First quintile people in Wuhan appreciate the new arterial roads, the broader avenues, the greater number of bus routes and buses plying them. But they underline the following specific problems with infrastructure:

4.1.1.1 Insufficient maintenance and management

Respondents point to the increasing gap between the excellent arterial and trunk road conditions (good surface, lighting etc), and smaller roads and streets that have been neglected for years. Resulting problems include among others bumpy and pot-holed road surface, flooding, mud and debris during the rainy season as a result of poor drainage, and lack of street lights with resulting poor safety at night.



In peri-urban areas, sub-standard public transit

People who live in peri-urban areas tend to be poor; SOEs located in those areas have languished, people are most often unemployed and there has been little development since to fuel the local economy. As a result, the local road systems, which were adequate some 20 years ago, have neither been maintained nor have they been improved – potholes, poor surfaces, poor drainage and road hazards of all kinds (including stolen manhole covers and other hazards, all unmarked) make for increasingly unpleasant trips. Because residents have low income, they only take the bus when it's absolutely necessary – making the operation of bus routes in these areas non profitable. At present, bus companies have little incentive to put in additional bus routes or to improve the service. It's a vicious cycle of low demand and sub-standard service – too few bus routes, rickety and dirty buses, short hours of operation, long wait between buses and poorly maintained and lit bus stops.

I'd love to take the bus, but...

“ Downtown, there's lots of buses! They're thick on the major roads and near the big shopping areas. But try to get service on the smaller roads, into our housing districts or in the outskirts! The buses we get out here are those that are too ramshackle for use downtown – and they're always overloaded with people out here. A couple of years ago, a bus crammed with people was riding down a hill pretty fast – then somehow the front wheel came off the bus and some people were injured in that accident. The City has long been neglecting transit in the suburbs. We live and work here, and it's really hard for us to take the bus.” Two freight carriers from Gutian area, Qiaokou district.

“There is only one bus line in our community---No.75. It only runs from 6:40 in

Pedestrians feel street crossings are inconvenient and unsafe

FG participants were adamant in their preference of overpasses and underpasses, over zebra crossings – they feel the former are much safer. However, the distance between these crossing structures forces people to walk long distances to cross the street – a major inconvenience to pedestrians, especially those who are carrying loads.

Overpasses are felt to be preferable to underpasses – respondents find them more “beautiful” and safer – although pedestrians are exposed to the elements (crushing heat, heavy rains or snow). Underpasses have the advantage of being cool in summer and relatively dry in winter, but respondents don’t like the fact that they’re dirty, smelly, dank and that they can be unsafe at night when passers-by are scarce.

Traffic safety

Many of Wuhan’s arterial roads have been improved – they are wider and have better surfacing. Traffic flow has increased, but FG respondents feel there is more speeding on those roads now and that the municipal government has not put in sufficient mechanisms to guarantee safety.

Speed kills

“Last September, a woman with a baby from Tieqiao village was riding a bicycle in the bike lane. Suddenly, she was squeezed against the sidewalk railing by a bus that was speeding towards his stop. Her handlebars got caught in the railing and the baby got thrown to the ground. The bus didn’t stop and the baby’s head was crushed under its wheels. Buses don’t even slow down at zebra crossings – every year three or four people get hit that way in Tieqiao village. I was also hit last year and suffered injuries to my feet. Drivers think they’re not responsible for pedestrians’ safety. They’re cut way too much slack!” It’s way

First quintile FG participants feel the following factors are the most dangerous threat to their safety:

Mixing pedestrians and cars is not safe

Along many of Wuhan's roads, and particularly on the outskirts, motorized and non-motorized traffic share the same roadway – in some cases there are no sidewalks or designated bike lanes. Buses and taxis cruise as close to the edge of the road as possible, looking for passengers; in pulling in to pick up clients, taxis rarely take heed of bikes or other pedestrians. The drivers of motorized vehicles do not seem conscious that they're at the wheel of a potentially lethal weapon.

Too many unsafe crossings

Respondents complain that several popular crossings are not indicated with zebra lines, nor are there traffic lights – but because the spot is a convenient one, people run the risk of accident by crossing anyway. Zebra crossings in many key intersections are not coupled with traffic lights – none of them have pedestrian-activated lights. Few drivers slow down at zebra crossings or leave them unoccupied during traffic jams. All of the above affect the safety of pedestrians and riders of NMT.

Respondents also complain about the timing of traffic lights – many feel the time allotted for pedestrians to cross is too short, forcing them to stop in the middle of a busy boulevard with inadequate protection, and wait until the next sequence to complete the crossing. They feel pedestrian safety would be enhanced if they were ensured sufficient crossing time – with perhaps stopwatches indicating the time remaining in the walk cycle.

Missing manhole covers are accidents waiting to happen

Failure to maintain roads, sidewalks and other infrastructure causes at best inconvenience, and at worst threatens people's safety. FG participants indicate it is common for roadside drains to be blocked, manhole covers missing and street lights burned out. It takes a long time for street crews to repair these problems. People have to wade through flooded road sections, and every year pedestrians and cyclists are injured when they fall in open manholes.

An obstacle course for pedestrians

“Walking around is a real obstacle course! There's garbage strewn around the sidewalk, there are no street lights at night, vehicles park on the sidewalk and so on. Last summer, near the vegetable market in Qianqiao village, the manhole cover was removed by crews repairing street drains. But then, they forgot to put the cover back on! An 8-year-old child fell into the shaft and was carried by the water underground! The poor kid was fished out at the next manhole!”

Transport management and enforcement

There's no room for pedestrians on the sidewalks

FG participants were near unanimous in their complaint that the city's sidewalks are getting crammed with stalls, kiosks, street vendors, garbage and parked vehicles. Most of this activity is thought to be illegal. Pedestrians are forced onto the road, endangering their own safety.

The streets are a permanent construction zone

Since different departments are responsible for maintenance on the underground gas lines, water and sewer pipes, as well as phone, cable and other lines, repairs are made helter skelter, without much coordination. The result is that streets become permanent construction zones – a major inconvenience to all.

There is poor supervision and enforcement of traffic rules

First quintile respondents generally hold positive attitudes towards police, and consider them essential for ensuring traffic safety and keeping public order. But without the knowledge that traffic rules will be enforced, people tend to ignore the law and do as they please. Respondents feel there needs to be more police and electronic monitoring devices on Wuhan's streets. As one participant said: "In front of a traffic cop, even a bad guy turns into a lamb." During FG discussions, participants tended to blame ineffective management and enforcement for most of the problems they raised. Infractions such as running red lights, making illegal turns, speeding through zebra crossings etc could be reduced or eliminated by increasing police presence and installing monitoring devices. It is also felt that police could assist children, the disabled and the elderly get across busy intersections safely. However, not only is more police presence necessary, but capacity for enforcement should be strengthened on the force.



Traffic police sometimes abuse their power

FG participants also complain about police abuse of power. The way they enforce traffic regulations is felt to be arbitrary and at times unfair; respondents call for “justice and humanity”.

... but be fair and reasonable!

“This summer, I was hauling goods on Baofeng No.1 Road when a military car drove close to me. I gestured the driver to slow down, but he drove on and hit me. The police told me it was easier to deal with ordinary vehicles. But because this involved the military, he fined me 150 yuan. It wasn’t my fault, but I’m the one who was stuck with the bill. Too unfair!”

A rickshaw driver in Hanzheng street, Qiaokou district.

“Cops seem to be pretty random when they write up the tickets. Last year, they had painted a one-meter yellow line along Zhongbei Road where stopping was forbidden, but drivers didn’t know about this. The cops were just lying in wait and would jump out to ticket drivers. They caught one after another!”

A resident of Chezhan Road, Jiang’an District.

Local transport in peri-urban areas

FG participants who live in peri-urban areas state that improvements to transport in the city’s outskirts lag way behind improvements in central areas. The local demand for public transit is in no way met by what is supplied by Wuhan’s bus companies. There are few bus lines; buses are in poor condition; and the roads there are also poorly maintained. Some roads have been upgraded, but respondents complain of universally

poor street lighting in the suburbs. In addition, participants say that when there is an emergency, they have trouble finding any means of transport.

Good luck finding a cab out here!

“Last winter, we went back to our home village for the holidays. It snowed while we were there and the baby got sick. We tried to call a cab, but they refused to drive so far. My husband and I had to carry the baby and walk all the way back home – a trek of a couple of hours. The baby’s cold got worse and we had to spend over 100 yuan on doctor and medicines. After that ordeal, I swore I’d never go back there. My mother-in-law has invited us often but I just won’t go anymore.”

An unemployed woman, Qinduankou area, Hanyang district.

“People around here have to be prepared in advance for anything. Women who are about to deliver a baby move close to the hospital a week before they’re due! When I went into labour, my husband couldn’t find a taxi to take me to the hospital. My family somehow got me to a taxi stand just as my waters broke! The baby was delivered in hospital but I’m sure his poor health is due to this mishap. In 1995, my mother had a stroke. We couldn’t get a cab, so we asked our work unit if we could use

4.1.5 Social exclusion and discrimination

4.1.5.1 Discrimination against migrants

During the FG sessions, residents voiced the common complaint that migrants are not as good as they are, and that they’re responsible for much of Wuhan’s transport problems. For instance, residents blame migrants for most traffic infractions. Some think they are the ones taking over the sidewalks to run their small businesses; as one respondent told us, “Most of the kebab vendors are migrants and their businesses are so dirty. Our government has spent money on road and sidewalk improvements, but they end up benefiting, they don’t care about our city environment and they’re ruining it!” Others suspect migrants of perpetrating most of the petty crimes, like bicycle and manhole cover thefts.

Migrants are very conscious of this animosity. When they use Wuhan's PT, they face resentment from local residents but also from the bus drivers and conductors. For example, W. C., a migrant from Suizhou told us, "You'd better not bother the locals. Otherwise they will abuse you." J. Z., a man from Xiantao, reports he's often treated very rudely by bus drivers. When they identify him as a migrant, they're no longer willing to give him change for the fare.

Migrants are easy marks

"Last winter, my husband rode his bike to an intersection and got off to walk across. He tried to avoid a taxi that suddenly backed up, but still the car hit his rear tire. Once this guy saw he was a migrant, he refused to pay for the damage. My husband had to call the company and he finally got some compensation.

A migrant woman from Huanggang.

"Wuhan locals are so unfair. They'll hit and abuse you, and then ask you for compensation! Last week, one of my workmates saw a car aiming right at her while she was on her bike. She swerved to avoid it and stopped, but still the car hit her arm. The driver got out and asked her to pay for damages! Pretty soon they had gathered a crowd and they all thought the driver was out of line. My friend suggested the police be called, but he refused. Finally, he paid her 5 yuan for bicycle

Faced with such open animosity, migrants opt for meakness and endure the slights that come their way. Q. R., a migrant from Yingcheng said, "When a local tries to abuse you, you'd better not argue even if you think he's wrong. When the abuse is just mild, you listen – and when they yell at you, you just apologize."Migrants are keenly aware of their irregular status in the city (they don't hold Wuhan *hukou* or official residency permits); they know that in any disagreement with a local, they're automatically held to be in the wrong.

Discrimination against the poorest of the poor

Handcarts and trishaws are the main means for carting goods in the big Hanzheng wholesale market (Qiaokou district). Operators have different views than other people

about traffic regulations and the police. They feel the regulations that apply to their vehicles are grossly unfair – for them, the police are to be feared. According to Wuhan regulations, handcarts and trishaws are not “normal” – they are thought to impede traffic and ruin Wuhan’s appearance. These vehicles are banned from city streets from 7am to 5 pm. But the regulation goes against market demand for these conveyances – these hours are precisely when people need goods taken from market to their destination. In order to make a living, the freight carriers have to flout the law.

Traffic police crack down severely on handcart and trishaw operators, often confiscating their vehicles without any recourse. L. L., one of our respondents, had his handcart impounded in the spring of 2002 while he was carting 4 or 5 huge bundles on the road; the police officer simply dumped the bundles on the street and took away the handcart. Some respondents say they often lose their vehicle this way, in some cases up to three or four times a year. Since a handcart only costs Y200-300, operators feel it’s best not to protest and just buy a new handcart or trishaw. Respondents suspect the very same confiscated conveyances are then sold on the used market. Powerless and without any recourse to redress, the poorest of the poor who do this backbreaking work say that they laugh about it so they won’t cry in despair.

Hanzheng market is a labyrinth of stalls located along small streets and alleyways – impassable to regular vehicles, but perfect for handcarts and trishaws. The operators fulfill the valuable service of moving heavy goods and collecting payment for the owners of the goods as well. Mode-driven FG participants feel that since the service they provide is essential, the city should support them through reasonable regulations instead of trying to eliminate them.

4.1.6 Transport problems specific to poor women

Women and men in Wuhan have different roles and responsibilities – poor women are mostly responsible for household chores, childcare and eldercare, they often work closer to home in order to fulfill those responsibilities. Women and girls are more vulnerable than men to petty crime, harassment and assault. The specific transport problems encountered by women were explored during FG discussions and the specific findings are as follows:

Women are more likely to be harassed or assaulted, especially at night

Female respondents brought up repeatedly the insecurity they feel on the roads at night – especially given the poor lighting off the main arterial roads. They feel safer on pedestrian overpasses than using underpasses. There are no guards in underpasses, nor are there any businesses or stalls – the underpasses can be deserted at night and women

are scared to walk there alone. In addition, respondents insist the streets in Wuhan should be better lit – this would go a long way to increase security for women. Given these factors, it's no surprise that women state they try to avoid going out at night.

Women are not safe out there

“One morning I was out at 5 to go to work, but you couldn't see anything because the lights were all out. A big guy suddenly came up to me and made a grab for jewelry – only I don't wear any! I got really scared and yelled out that my husband was right behind me – that distracted him and I ran away. He ran right after me, saying “I'll kill you if you run!” but I made it to an open shop – the owner took me in and gave me some water.. I had such a fright. He said I was as white as a sheet.”

A Huanggang migrant.

“One evening last summer, at about 7 or 8 o'clock, I was riding my bike with my cousin on the back and two watermelons in the basket. When we reached the wall across Tieji road, two young men rushed out to block our way – one of them started dragging my cousin away. We were both so

Transport planners ignore women's needs

Some female participants feel that transport infrastructure is designed without considering women's bodies. The steps to get on the bus require a large step up –

harder for women to negotiate. Similarly, the handrails on the bus are often out of reach for women. Women who more often carry bundles have no place on the bus to put parcels. And of course, buses are not designed for women who carry young children.

Wuhan's transport authorities seldom respond to first quintile requests

FG participants are unanimous in saying they get little attention from the authorities in terms of transport needs and preferences. They say problems have been duly reported for years – roads in need of maintenance, drains and sewers overflowing, lack of street lights etc – to no avail. For example, poor people living in the Qinduankou area of Hanyang district say they have long been promised the Changfeng bridge, which was to span the Han river and link Hanyang with Hankou. This bridge would improve greatly transport convenience and speed for residents. But although Changfeng bridge has been on the list of municipal projects for the past 20 years, the first stone has yet to be laid.

A bridge too far...

“We used to take a ferry across the Han, but now the boatmen can't be bothered with passengers – it doesn't pay enough. So every time I go to Hankou, it takes me over an hour because it's a huge detour. Even kids find it hard; there's no school here and they have to commute long distances.”

A man from Qinduankou, Hanyang district.

“The day welfare payments are issued, the old men walk all the way to the bank in Hankou so they start early. They won't spend a yuan on a trishaw or a bus. We've been waiting a long time for that bridge here. It's been announced in the papers many times. I've been walking everywhere since I was a kid and I'm 49 now. A lifetime of walking! I could ride a bike or

4.2 First quintile views on specific transport modes

During FG discussions, participants were guided to discuss the modes of transport they use most frequently in some detail. As mentioned above, Wuhan's poor are first pedestrians, then public transit users, bicycle riders and finally, they use taxis and moto-taxis. The main problems they encounter when using these means of transport are outlined below. We also examine the impact of Wuhan's ban on trishaw taxis – an issue that was keenly discussed by our participants.

Walking

There is little room on sidewalks for pedestrians

The crowding of sidewalks with stalls, kiosks, vendors and parked vehicles forces pedestrians onto the roadway. Respondents reported frequent accidents as a result, particularly at rush hour when vehicles, cyclists and pedestrians all jostle along narrow streets.

The occupation of sidewalks by small businesses also creates litter, smoke (from portable kebab grills) and noise, further degrading the city environment. Footing can be treacherous – one old respondent reported she slipped on detritus and was left lying on the street for over an hour before emergency services were called.

Roadsides are left bare of trees or vegetation

Summers in Wuhan are extremely hot and humid – temperatures regularly hit the low 40 degrees celsius. On unshaded city streets, surface temperatures have been recorded as high as 50 degrees. As FG discussions took place in summer, the discomfort pedestrians experience was hotly discussed. The lack of street trees which could provide shade and keep temperatures down was universally decried. People complained about road widening projects where all existing trees had been cut down and none planted to replace them. Respondents also criticized those who decided to plant grass and shrubs instead of trees along arterials – again, they provide no shade for pedestrians. There are a lot of old avenues which were planted long ago with camphor, French chestnut and other tree species – planners should ensure these are preserved during road improvement projects.

Street design and street furniture are key to pedestrian comfort and safety

Zebra crossings, traffic lights, pedestrian overpasses and underpasses, street lights, street furniture and other infrastructure are key to pedestrian convenience, safety and security. For example, residents of the Wuzhong neighbourhood have to cross the busy Zhongbei arterial every day to get to the local vegetable market. They use the zebra crossing, but there is no traffic light to force cars to stop – most vehicles don't pay any heed to the crossing sign.

Lack of street lights causes insecurity – and not only for women. Male bike riders report having trouble spotting obstacles on the roadway if it's too dark – the missing manhole covers are especially treacherous. The stretch between Guocikou in Hanyang and the Wuhan Tile Works is reported to be especially dangerous because it is not lit at all. Fatal accidents, assaults and rapes have occurred there. Witnesses can't report license plate numbers and drivers often speed away from the scene of an accident. Even taxi drivers avoid this stretch of road and refuse to take on passengers who are going there.

Missing manhole covers are a hazard to pedestrians. Similarly, blocked sewers or drainage channels lead to flooding – affecting pedestrians disproportionately. In addition, four of the focus groups complained specifically that there are not enough public toilets on Wuhan's main roads; the lack of benches for people to rest was also mentioned.

Vehicles use sidewalks and bike lanes, endangering pedestrians

Respondents were critical of drivers who flout regulations and drive illegally on sidewalks or along bike lanes. Such incursions often are done at high speed by drivers frustrated by traffic jams. They are considered a serious hazard to pedestrians.

Public Transit

Dissatisfaction with the design of bus routes and the location of bus stops

The main problem raised by participants has to do with the proliferation and duplication of bus routes running through the city centre – while peri-urban areas are under-served. The demand for PT in the suburbs is not met by the transit providers. Of the 18 focus groups conducted, 34 participants in 13 groups specifically decried the poor service once people leave central areas – the most frequently discussed issue related to public transit.

The proliferation of routes through central districts is also problematic, in that buses crowd bus stop areas, jostle for space, attempt to horn in on good positions to attract

more passengers and in some cases wait until their seats are filled to proceed along the route – many of these problems resulting from the duplication of bus lines plying the same route. The double and triple parking of buses at bus stops, the jostling of vehicles and their unpredictable movement is felt to be hazardous to bus riders getting on or off. Participants are also critical of the location of bus stops. Too many bus lines share the same stop, leading to the above-mentioned crowding. One important stop where these problems are felt to be acute is Zhongshan Park.

Deadly force

“In March this year, I saw a terrible accident with my own eyes. A girl of about 17 or 18 got off the bus at Three-eyed Bridge. She was about to cross in front of the bus to get to the other side of the road. But suddenly, a vehicle travelling really fast hit her and sent her flying – the driver was making for that bus stop. There was blood everywhere – I heard she died in hospital soon after getting there.”

4.2.2.2 Transit fares

Over the past few years, there has been a steady decrease in the number of buses that accept passengers holding the reduced fare monthly pass (issued to the disabled, the abject poor and the elderly, as well as to students). Meanwhile, there has been a corresponding increase in the number of special bus lines – lines where the fare is Y2 instead of the average Y1.2, and where the reduced price passes are not accepted. Respondents feel this represents a hidden transit fare hike and they complain about the fact that so few buses will accept their monthly passes. Wily participants have noticed that even if the price of oil has dropped, the bus fare hasn't.

Exact fare only

“For laid off people like me, the fare is too high. We get charged Y1.2 no matter how long we ride that bus. But we're all short of small change and give the driver Y.5 or 2. Some drivers will make change, but not too many. Yet if you only have Y1.1, you're told to get off! It's so embarrassing.”

Regular bus lines charge a one-fare per ride price of Y1.2; there are no free transfers

allowed between bus lines. Very few buses have conductors to take tickets and offer change. Yet the Y0.1 (paper or coin) is now rarely used and people scramble for change. Drivers either refuse to take people who don't have exact change or force them to put more money in the fare box. In some cases, poor passengers stand at the fare box and ask of other riders the necessary change before it is put in – an embarrassing situation for them. During FG discussions, most participants feel strongly that the fare should be changed to a round number – and of course they want that to be 1 yuan.

4.2.2.2 Quality of service

Respondents complain that bus drivers in Wuhan are rude to passengers. They yell at passengers to get off before the bus comes to a complete stop. They either don't announce a stop, or don't correct the automated system when it slips a cog. Regulations stipulate that seniors over 65 and people with certain disabilities can ride free of charge on buses. But drivers are not keen to waste time on non-paying customers and refuse to stop to let them on. Participants also complain that in summer, buses that are not air-conditioned don't even have curtains in the windows to shade passengers. Some are dirty, smelly and in poor condition, with rusty handrails (drivers are responsible for the cleanliness of their buses).

Local residents are more unhappy with PT than migrants

There is more dissatisfaction among residents than among migrants over Wuhan's public transit system – issues such as bus routes, ticket prices, service quality and so on. Migrants tend to be more satisfied because the service in the city is clearly superior to service in the countryside. However, migrants complain about the discrimination they face when using PT. Drivers have refused to take migrants who were carrying large parcels or luggage – in some cases they impose illegally fees that are twice or three times greater. Drivers don't answer their queries about stops and treat them rudely or ignore their requests altogether.

Bicycles

Lack of safety while riding

For cyclists, the most important problem is lack of safety. This is caused by the following factors: narrow roads where vehicles, pedestrians and bicycles all compete for space; many of the larger roads are being widened by eliminating the bike lane, many don't have bike lanes and in other cases bike lanes are increasingly being used by cars; bus stops are located along sidewalks, often inside the bike lanes – and bus drivers ignore cyclists as they approach stops.

The trials of cycling

“Bicycles in Wuhan don’t get any respect. It’s tough to ride everywhere. Roads are terrible, potholed, full of obstructions, in some cases narrow. The bike lane Tian’an Hotel on Xinhua road is so narrow and bumpy that it’s impossible to ride on it and bikers just go onto the road. There should be better conditions for cyclists.”

Bicycle theft is rampant

Almost all FG participants who ride bicycles have had their bikes stolen. Many have lost more than one. “The bicycle disappeared soon after being parked downstairs”, “I parked my bicycle at the gate of the shopping mall. I could not find it when I came back.” Although they are relatively cheap (about 150 yuan for a new one, much less for a used one), a stolen bicycle is difficult to replace for poor people. Permanent residents often blame migrants for the thefts. And participants feel more should be done by police to find the culprits and punish them severely.

Taxis

Taxis are the preferred mode of transportation, when money is no object. After the trishaw taxis were banned, taxi fares dropped in Wuhan, which encouraged some of the poor to use taxis. A municipal survey conducted after the ban shows that citizens are spending more on taxis than ever before. In our focus group discussions, central area resident women ranked taxis third in terms of frequency of use. Those participants feel taxis are safer, faster, more comfortable, more convenient than buses, trishaws and moto-taxis. They comment on the convenience of being able to carry parcels and luggage with them. The main drawback with taxis is the cost of the ride which tends to be higher, and the risk of passengers being “swindled” by drivers. In one of the groups, participants stated they felt the taxi meters were not reliable – that they end up being charged more than they should.

Moto-taxis

Moto-taxis are motorcycles where rides are offered for a fare – not a legal business, but hard to control. Most moto-taxi operators are either laid-off workers or migrants. Statistics show there are 180,000 motorcycles in Wuhan, approximately 10,000 of which are illegally running moto-taxi businesses. Moto-taxis are liked for being fast, able to wriggle through traffic, make u-turns and take passengers through lanes and alley-ways right into their home courtyard. Compared to taxis, their fares are much lower. Among FG participants, over 17% state the moto-taxi is one of the modes they use. And for non-routine trips, four of the 18 groups picked the moto-taxi as their top mode. People opt for the moto-taxi if they have to go far in a short time.

Cutting through traffic jams

“In May, my sister living in Hanyang had heart disease. I meant to get to her place by taxi, but then I thought of the traffic jams so I took a moto-taxi. It just cut through the traffic and got me there in 20 minutes. A record.”

Resident of Chezhan street, Hankou district.

“Sometimes when I think of the long ride and the cost of a taxi, I choose to go by moto-taxi instead. In April this year, one of my friends called for help. The destination was Wujiashan which was 20 miles away, at least 40 minutes. I bargained for the

However, there are serious problems with the moto-taxis. Respondents complain about the mass of moto-taxis jostling for passengers at certain markets, the fact that they’re noisy and that riding them can be unsafe. Some participants state they would never ride one because they feel they’re too dangerous.

Because of the impact moto-taxis have on the taxi business, because they cause pollution and are noisy, and because they can be a hazard in traffic, the Wuhan municipal government has started to regulate them. Starting in August 2003, the city issued the *Taxi Administration Ordinance*. Such infractions as illegal stopping and parking, riding on illegal lanes and others are now forbidden. In September, the city officially banned all moto-taxi business. Once illegal operators are found, they are arrested, their vehicles impounded, their licenses withdrawn and they are fined Y3,000;

“illegal earnings” are to be confiscated. This ban is similar to the ban on trishaw taxis that took place 6 months previously (see 6.2.6 below).

Most of the FG participants applauded the government’s decision to ban moto-taxis – however two women migrants indicated the ban would make it inconvenient for them during routine trips.

Trishaws

Trishaws are called “*mamu*” in Wuhan and they’ve been a popular transport mode for low to medium income people. The number of licensed trishaws was over 18,000 before the ban in mid-2003. Typically, Wuhan’s trishaws were three-wheeled vehicles, either motorized or not, and with a covered cab to give passengers shelter from the elements. Their small size, manoeuvrability and the cheap fares charged made them ideal for short to mid-distance runs, for delivering people to narrow alleyways and courtyards, and for transporting bulky parcels and luggage. The drawbacks of the trishaws were their notorious flouting of traffic regulations and the volume of polluted exhaust emitted – equal that of 6 to 10 cars according to official sources. Moreover, the trishaws were not safe for their riders; they are more unstable, and passengers had little protection in a collision or an accident. Wuhan Transportation Administration Department tallied the following accident statistics for *mamus*: from January 1998 to the May 2003, *mamus* were involved in over 2,500 accidents, with 129 people dead and 931 injured. (*Note to Prof Zhong: how does this compare with safety for other vehicles?*)

Banning *mamus* was attempted several times by the municipal government, but the measure was dropped when drivers protested (most operators were unemployed workers for whom the *mamu* license had been offered as a way out of indigence). This past May, Wuhan’s Standing Committee of the legislature passed the amended *Wuhan Road and Transportation Administration Ordinance*. It decreed *mamus* banned as of June 20th in the city’s seven urban districts. Licenses issued by the city would be cancelled and the trishaws would be bought back from operators at a discount. As to future jobs for the drivers, the city announced they would be entitled to either priority job offers or a one-time compensation for loss of business. And in order to placate the riding public, the government lowered the base fare of regular taxis.

This time, *mamu* operators complied – they turned in their trishaws. Official statistics indicate that as a result, air quality in central Wuhan has improved, with nitrogen dioxide emissions down 20% and noise pollution reduced by 1 decibel. Still, reaction to the ban is far from universally positive, as our focus group discussions revealed.

The ban on mamus has improved traffic safety

Some participants reported having been injured during *mamu* rides – they are well known as unsafe vehicles and the majority of respondents agreed that the ban had improved traffic safety and was a correct measure for the government to take. As for handcart operators and freight haulers, they're in favour of the ban because there are fewer traffic jams and it's easier for them to make a living.

You take your life in your hands with mamus!

“In 1998, I was on my way home after work near No.8 hospital. There were lots of *mamus* milling around, vying for passengers. So I walked my bike a little ways. But all of a sudden, a *mamu* rushed forward and rode over my foot, crushing it. Somehow I only felt the injury later. I had to go to hospital and it cost me a lot. – it's not the *mamu* driver that paid for that.”

Unemployed women, Changnian area, Wuchang district.

“In 1995, the *mamu* in which I was riding flipped over. I was trapped inside and my feet were crushed. But the driver didn't want to take me to hospital – he was afraid it was going to cost him. We settled it between us when he agreed to pay me Y500. I still have a scar on my ankle from that accident.”

Unemployed woman, Changnian area, Wuchang district.

The ban has reduced transport and job options for the urban poor

The low cost and versatility of the *mamus* – the fact they could take passengers places where there are no bus routes or where taxis cannot enter, and that they willingly carried parcels and luggage – is still missed by many. In the Qinduankou area of Hanyang district, L. S. told us she had to get someone to help her carry her TV to the repair shop since *mamus* are no longer available for carting goods. The ban has also reduced the job opportunities for people who have low education, few marketable skills, are now older and have been laid-off from their jobs – thereby contributing to a rise in urban poverty.

My ride to work

“I used to ride a *mamu* to a bus stop on my way to work every day. But this is no longer possible. So people take some of these minibuses instead – but the fare for those is at least Y3, and more on rainy days – more expensive than *mamus*. My commute now costs me Y7 or 8 a day. That’s why so many people can’t take jobs far away from where they

Mamu operators have lost their livelihood

Mamu operators were among the most disadvantaged people in Wuhan; they were the disabled, the laid-off workers, the unemployed and rural migrants to the city. Among our focus group participants, three were former *mamu* drivers – two women and one disabled man; one respondent is the wife of a former *mamu* driver – also disabled. While discussing the issue with the group, they said they understood why this measure had been taken – but they stated that they have been hurt by the ban.

Before the ban, life was tough for *mamu* drivers. Other vehicles saw *mamus* as a major hassle on the roads and were quick to cut them off or squeeze them against the curb. This harassment got worse once the ban was announced – an “open season” on

mamus. A former trishaw operator from Wuzhong area (Wuchang district) reported that drivers would take aim at *mamus*, coming on at great speed and in some cases overturning the trishaws. The ban has since made it difficult for them to earn income. A former driver from Qinduankou area (Hanyang district) says she used to drive her child to school, saving on the bus fare – now the child’s school commute by bus and microbus can cost up to 3 yuan per day. The added burden is hard to bear on a very limited income.

Mamu drivers are also reporting having trouble finding alternate employment. The authorities have yet to make good on their promises of finding them work. The women drivers have been promised job placements from their neighbourhood committees, but this has yet to happen and their income has been cut drastically.

4.3 Implications of the Transport Burden on the Poor

4.3.1 Transport greatly restricts the life of the poor

Respondents identified several ways in which their lives are restricted as a result of difficult transport access.

Participants state that muddy, flooded and potholed streets that are also poorly lit makes routine trips extremely burdensome. This affects both their quality of life and the economic opportunities in their neighbourhood – poor infrastructure does not attract new investors. In addition, areas such as Qinduankou are underserved by public transit, forcing residents to take more expensive modes of transport if they don’t want to walk. Seniors from the community who depend on social assistance walk to the banks where payments are issued in order to save on the bus fare – a trek that takes them over an hour. Those who must use the bus end up spending Y7 to 10 daily on the few expensive bus lines that service the area – part of the expense is due to the fact that free transfers are not allowed between routes. Many state that these fares are prohibitive given the kind of income they are likely to earn – hence they remain unemployed. In the Kangyuan area of Qingshan district, transport access is hampered by the design of the bus route and the location of stops; the long distance between stops is a major barrier to public transit use in the area. Clearly, barriers to transport are limiting the opportunities sought by some of Wuhan’s poor.

The quality, and in some cases the safety of people’s lives is also affected by difficult

transport access. Participants identify as hardships the following: it is difficult to get to the hospital in case of an emergency; women about to give birth move to rented rooms close to a hospital a few weeks ahead in order to be assured of medical assistance; people choose to forego a visit to the doctor in order to save on all the costs including transport; visiting friends and relatives is cumbersome.

4.3.2 Public transit fares are a major barrier to seeking better opportunities

Transit fares have been singled out by respondents as a main factor that prevents them from seeking better economic opportunities. They state that transport costs were a major consideration when deciding whether or not to take a job. Wuhan's poor people are disproportionately of lower educational attainment, have few marketable skills, are often older people with more dependents, and in many cases are female. The jobs they get will pay on average Y400 to 700 per month. Such a monthly salary precludes a long commute involving many transfers or the use of anything more expensive than public transit. Respondents indicated clearly that they limited their work options to jobs located nearby in order to limit transport costs. To broaden job opportunities for the poor – and hence their ability to work themselves out of indigence – the municipal government would have to consider measures to reduce transport costs.

I can't afford the bus fare

“I could have got a job delivering newspaper at Yangchahu that paid Y600. But with transit costs of Y3-4 a day and no lunch provided, it's hardly worth it.” Unemployed man, Wuzhong area, Wuchang district.

“Someone found me a job in Wuchang that paid about Y500. The job was easy, but there were no days off allowed. I had to take the bus everyday and I needed to transfer once – that cost me Y5, so 150 each month. That's a big chunk of that salary, not to mention the long bus ride every day. It's no better than not going, so I'd rather stay at home and live on pickled radishes.” Woman living in Zichezhan.

“My daughter was given a job at the Wuhan Plaza department store in Hankou after graduation; the job paid her Y600. There was not much left once she paid for her meals and the bus. So she just gave up.” Resident of Kangyuan area, Qingshan district.

“I got a job as a cook at 'Green World' on Guanshansan street last year. The pay was Y700,

5. Poor and Disabled: Doubly disadvantaged

For logistical reasons and to gain insight into the particularities of specific situations facing people, we use the case study approach to look into transport use, needs and preferences of the disabled. The research team approached the Wuhan Association of Disabled People in order to better assess the composition of Wuhan’s disabled population. The disabled are generally divided into the following groups: Physically disabled, visually impaired, hearing impaired and mentally disabled. Physically disabled people include those who were born with such a disability (cerebral palsy), and those who were disabled as a result of illness or accident (paraplegics, quadraplegics, amputees, people needing crutches or canes to walk etc). For each category of disabled, we selected two case study subjects, a man and a woman. All subjects live in Jiangan district and interviews were conducted in the offices of the District Disabled Persons Association. 8 case studies were conducted – a summary of the cases can be read in Annex 6.

Our researchers have been struck by the difficult circumstances and barriers faced by the disabled, compared to the general population. Their views on transport reflect the difficulties of access they face.

5.1 Routine Trips of Disabled People

Compared to the rest of our first quintile focus group participants, disabled people tend to make fewer trips – and most of those involve walking for daily errands or for health reasons. (see Table 5-1).

Table 5-1 Routine Trips – Disabled People

Category		Walking	Bus	Disabled Trishaw
Physical	Male			•
	Female	•		
Visually Impaired	Male	•	•	

Category		Walking	Bus	Disabled Trishaw
	Female	•		
Hearing Impaired	Male	•		
	Female	•		
Mentally Disabled	Male	•		
	Female	•	•	

5.2 Non-Routine Trips

Most of Wuhan’s disabled people are also among the city’s abject poor – unless they have wealthy relatives to depend on, or they are among a very small minority of disabled who earn good incomes. Hemmed in by low income and often dependent on social assistance, non-routine trips are made mostly by public transit, although many cite taxis as alternatives they use in emergencies. Most respondents cite as non-routine trips visits to relatives as well as visits to doctors and hospitals for treatment (see Table 5-2).

Table 5-2 Non-Routine Trips – Disabled People

Category		Walking	Bus	Disabled Trishaw	Taxi
Physical Disability	Male			•	•
	Female		•		
Visually Impaired	Male				
	Female	•			•
Hearing Impaired	Male		•		•
	Female		•		•
Mentally disabled	Male		•		
	Female		•		

5.3 Disabled people's views on transport in Wuhan

In general, disabled people identify to main issues with transport access. First, existing transport infrastructure and equipment have been designed without due consideration of the disabled's needs. Secondly, they report widespread discrimination against them and abuse on the part of transport workers (bus, taxi drivers etc). Specific issues arose when they discussed the transport modes they use the most frequently.

Walking

For most disabled people, good unimpeded surfaces are key for roads and sidewalks; this is true for visually impaired people just as it is for physically disabled people for whom mobility is difficult. A key complaint is the lack of warning barriers in front of road or sidewalk hazards such as open manholes, ditches or other obstacles.

Treacherous footing

“It's really dangerous when manhole covers go missing for a long time. This spring, another blind person I know went out to buy vegetables and fell into the open hole – he broke a leg and ended up in a cast for 2 or 3 months.”

Visually impaired subject.

“Two or three months before, in the period when a stretch of Zhongshan avenue was being repaired, the manhole covers just disappeared. Someone fell into the hole, but fortunately he was holding an umbrella. so that broke his fall. He was pulled out by a

The two visually impaired subjects we talked to felt there are quite a few special sidewalks for them in Wuhan (with texture to guide their way and ramps to negotiate curbs etc). However, one respondent complained that all sorts of businesses, peddlars and kiosks are encroaching on the sidewalks, making it more treacherous for them.

The height of the curb to the street (relatively few intersections have wheelchair ramps),

the open gutters and other obstacles are hard to negotiate for those whose disability is ambulatory. One amputee we interviewed stated it is hard to get off the curb and step over the gutters – he has to crawl down on all fours because his footing is so precarious.

Disabled people also complain of insufficient assistance with crossing at intersections. Some crossroads do not have either traffic lights or zebra crossings. In other locations, the timing of the green light for pedestrians is not long enough.

Public transit

All disabled respondents who use public transit state they are dissatisfied with the service; drivers and conductors are especially resented for being rude and unkind to the disabled.

Taunted by a driver

Z. is mentally ill. In 1999, she was diagnosed with schizophrenia while she was in high school. Her illness is said to have been triggered by study pressures and by difficult family circumstances – both her parents had been laid-off. She has since been on medication to control her illness. One day while taking the 807 bus, she dropped a coin on the floor before picking it up and putting it in the fare box. The driver insulted her, calling her “poorly educated”. She was deeply disturbed by the remark – it sent her into

They hate the Free Pass!

“I have a free pass but many buses don’t accept it and drivers look down on those who use them. In 1999, I was studying in Shipailing, often taking the 557 bus. Initially, I was allowed to take the bus, but once the drivers figured out I was blind, they wouldn’t open the bus door right at the stop, but some ways away. Other riders just ran for the bus, but I was just left there. Sometimes when I managed to scramble after the others and get on, the driver said, “You are here again!” I was very angry and I complained to the bus company management. But it was useless. I eventually threw away that free pass – I only recently started using it again. Sometimes drivers claim not to know anything about it for the disabled. – they insist I pay full fare. One time our disabled group took the bus on an outing. When we showed the driver our disabled pass, he exclaimed, “Gao Gui

Disabled subjects complain also of drivers not announcing stops – a key issue with visually impaired people. In addition, in order to maximize speed and passengers, some buses don't stop at the minor stations if no one is waiting for the bus – disabled passengers are not always let off at the stop of their choice, further inconveniencing them.

Drivers aren't aware of the disabled

“One time I took the 68 bus with my sign-language teacher. At the Macao road station, the driver asked if there was anyone who wanted to get off – and just drove on when nobody piped up. My teacher reminded him to stop at every station and told him that he should take hearing impaired people into consideration. But he started arguing with her. I got so angry I got off before I got to my destination.”

Some automated devices installed on buses are not appropriate for the disabled and have resulted in a decrease in the quality of service offered to them. For instance, when stops are announced only through visual aids such as a scrolling screen, the visually impaired are left in the dark. Buses have been designed without consideration for those using wheelchairs or for whom the high steps represent a major obstacle. Handrails are also too high for many of the physically disabled.

Disabled Trishaw

Disabled trishaws are prohibited on some of Wuhan's roads – for instance, it's forbidden to use them on Jiangnan road. For W. Z., a paraplegic, the disabled trishaw is absolutely necessary if he wants to go places in the city. While riding his trishaw on Sanyang road, a traffic police stopped him as he was about to go into a forbidden zone. But passers-by crowded around and supported his argument. Eventually, the police officer allowed him to pass.

The disabled have been affected by the ban on *mamus* in June 2003. Since then, disabled trishaws cannot take other passengers or carry any cargo. This was to ensure no disabled person holding a trishaw license could flout the ban by running an illegal

taxi business. But in fact, this measure is affecting the life of the disabled. Now, they can't take their child to school on the trishaw; they can't go shopping with their family – and yet without the help of their family in going inside stores, picking up parcels and so on, they cannot take care of this chore alone either.

Taxis

The subjects complain of dishonest taxi drivers who swindle the disabled. Those who have trouble communicating with non-disabled people report that when they have taken cabs, drivers have deliberately taken them on longer trips and have charged them higher fares, thinking they could not report the abuse.

5.4 Views of the disabled on improving transport access

Disabled people from all the categories we talked to feel transport access needs to be massively improved – the benefits to which they are entitled as citizens have yet to be delivered. Regulations stipulate that public transit in Wuhan is free for those who are physically disabled and for the visually impaired. This benefit is not extended to other categories of disabled people. Respondents point out that they too are disabled, discriminated against in the job market, living in poverty and on income assistance; they should get free transit as well in order to reduce the burdens they face. Still, those who are issued the free pass state that they have trouble using it because bus drivers refuse to take them on or to accept the card as payment. Clearly, if free passes are issued, the municipal government must ensure they are respected by transit operators.

All subjects feel strongly that the city has to also improve safety at intersections by putting in safer pedestrian crossing infrastructure.

Some of the recommendations for improvement put forward by subjects are specific to their disability.

Physically Disabled

All intersection sidewalk curbs should be equipped with wheelchair ramps to make the sidewalks more accessible. Steps to get on buses should be lowered in order to facilitate entry and exit. Buses should be equipped with lower handrails. Buildings should have access ramps to allow entry and exit by wheelchair.

Visually Impaired

Missing manhole covers should be immediately replaced; bus drivers should announce each stop to better guide those who can't read.

Hearing Impaired

Buses should be equipped with electric screens where the next bus stop would be indicated.

Mentally Disabled

Transportation workers should be educated about mentally disabled and mentally ill people in order to show them respect.

5.5 Disabled People and Opportunity

Case study interviews with disabled people revealed that the worst problem they face is economic insecurity. The present social security system provides them with only the lowest living standard subsidy, instead of promoting employment or self-employment. This bare minimum subsidy does not necessarily cover the expenses of seeing a doctor, buying medicines, family life, and children's education. The present system forces the disabled into dependence, and the safety net offered is not adequate.

Many of the respondents indicated they were capable of working but this opportunity is never offered to them. They feel their capacities and talents are not being tapped – the enabling environment is just not there and discrimination is widespread. This social exclusion is a burden for most disabled people.

You need not apply

"I once asked the Disabled Association in Wuhan to help my daughter find a job. I was really surprised when the official told me, "Many healthy people are unemployed. What can she do with such a disease?" I was very angry and told him the workers in Yonghong Machine Shop used to be disabled – that "sheltered workshop" is closed now. But why were disabled people given work then and not now? If the disabled can work, their quality of life will improve, they can pay for their medicines, they can afford to go to the hospital – this would be good for them and good for society. Now they totally depend on support from the

A former *mamu* driver we interviewed suffers from a “class two” disability – he is paraplegic and incapable of walking unassisted. Before June, 2003, he made a living by operating his *mamu* business. Since the ban on trishaws, he is unemployed and depends on the MLSS handout; the compensation he was offered for his trishaw license is insufficient to allow him to start another business. He still hopes the government will relent and allow trishaws to carry people and goods for a fee.

Before the *mamu* ban, disabled people operated some 2,000 trishaw taxis – most of them are now without a source of income outside social security. Finding regular work is difficult for most of them, given current widespread discrimination against the disabled in the labour force. It is clear from our case studies that the *mamu* ban has disproportionately affected the disabled.

6. Improving Access to Transport for Wuhan's Poor

Focus group discussions centered on priority problems for each of the main transport modes used by the group. This was followed by a discussion and ranking of preferred improvements for each mode. Compiling these findings, the researchers identify the following key recommendations in order to improve transport access for Wuhan's poor. And they summarize the participants' views on the need for a public consultation process to inform the municipal government's transport policies and programs.

6.1 Target investment on transport infrastructure that improves access for the poor

Peri-urban areas are in special need of targeted attention. It is on the outskirts of the city for instance that pedestrians and vehicles share the same roadway (no sidewalks or bike lanes) and that crossings are most unsafe. Participants suggested options such as more stringent enforcement of traffic regulations, more regular maintenance of suburb roads, installation of sidewalks, bike lanes and street lamps, and improving the safety of road crossings with appropriate structures (overpasses, underpasses, pedestrian-activated lights, zebra crossings). Participants recognize this would require significant investments be made by the city.

Wuhan is already spending considerable budgets on transport improvements. Spending on infrastructure has gone from Y653 million in 2000, to Y1,279 million in 2001, and Y2,386 million in 2002. In order to increase this spending, the Wuhan municipal government has applied to the World Bank for a Y200 million loan that would cover sub-projects in the areas of road improvements, public transportation, safety and management, environmental protection and others – the total costs of the 5-year project are estimated at 4.9 billion. The project already includes increasing the number of pedestrian overpasses and underpasses. The objective of the safety and management sub-project is to make transport safer for pedestrians and non-motorized vehicles. On public transit, buses will get designated lanes and priority during peak traffic hours; terminus facilities will be improved, as will the overall system management.

Current plans only cover larger roads and arterials. But our study indicates there is a glaring need to improve transport in peri-urban areas – where economic rates of returns for such improvements may not be large, but where social benefits would be significant – particularly for poor migrants who tend to live in those areas. Improving transit in those areas would improve access to better economic opportunities and social services

to the largely poor population of the suburbs.

In more central areas of the city, secondary roads and residential streets and alleys are key to the quality of life enjoyed by people. Because of the old *danwei* system and the kind of urban development it generated, the permanent residents who are poor can get most of their needs met in the vicinity of their apartments. Quality of life for the poor in central areas is therefore linked to street conditions and local transport access. Neighbourhood road improvements, including better surfacing, unencumbered sidewalks, street lighting, the planting of street trees and more stringent enforcement of traffic regulations have all been identified as relatively small changes that would make a big difference for the poor.

My Five-Road-Plan

Ms C. of Qinduankou area in Hanyang believes that strategic work on five key roads would make all the difference for her community. She's willing to share her plans with the authorities.

Step 1: extend the road from Guocikou to the Wuhan No 2 Brick and Tile Works.

Initially, there was no road there but once the Budweiser Beer plant was built, a road was put in. Now this road extends to the No 3 Brick and Tile Works, but not to the No 2. It should. Step 2: put in a road from the Budweiser plant to Huangjinkou.

6.2 Redesign public transit routes and increase peri-urban areas' access to transit

Study respondents were unanimous in criticizing Wuhan's public transit bus routes. Bus routes run mostly along major thoroughfares in central areas, but there are few if any bus routes in many of the city's peri-urban areas. In the area around the Wuhan Brick and Tile Works in Qinduankou (Hanyang district), there is only one bus route serving the large community. Residents of Qingshan district's Kangyuan, and Tiexicun have very long walks to get to any bus stop. Somehow, the transit system has to be rationalized in order to make service more equitable, particularly to the poor. It is understood that in peri-urban areas, population is less concentrated therefore the kind of

rolling stock used should be appropriate to community needs. Respondents also feel that greater equity would be achieved by variable price tickets – where the fare would reflect the distance covered. This would make public transit more affordable for those who only need to go a few stops while remaining reasonable for those who need to take the bus farther.

The public transit system in Wuhan is once again undergoing reform. This is an opportune time to look into problems highlighted in this study, such as uneven coverage, congestion of buses at major stops, the fare structure, poor condition of much of the rolling stock – particularly in peri-urban areas, etc.

6.3 Give priority to pedestrian needs when deciding sidewalk use

Sidewalks in Wuhan are clogged with kiosks, street vendors, illegally parked vehicles and other obstructions – often forcing pedestrians onto the roadway and endangering their safety. Some of the illegal businesses taking up sidewalk space are operated by migrants. In certain cases, the obstructions are legal – the city is getting taxation revenue for kiosks and other “legal” businesses. Certain sidewalks have been appropriated by large restaurants and other businesses as their de facto parking lots – for which they are taxed by the city. But the interests and safety of pedestrians have not been taken into consideration. Above all, there is a need for improved planning and transparent system for the rental of public sidewalk space – there are limits to the space available and the city should ensure that pedestrians are not squeezed out onto the roads.

Aside from appropriation of sidewalk space, enterprises and residents use the streets to pile up rubbish and, in some cases, store bulky items. One participant stated a recycling business is using the street in front of her apartment to stack up waste materials before they are carted away – this business has been allowed to set up shop without due consideration of pedestrians and neighbours. Clearly, there is a need for improved enforcement of city regulations and systematic crack-down on violators.

6.4 Crack down on careless drivers

Dangerous drivers (of motorized vehicles) who flout traffic regulations endanger pedestrians, riders and other drivers. During focus group discussions, participants were alarmed at the lack of traffic supervision and enforcement (absence or inattention of police). Infractions such as speeding, illegal U-turns, illegal driving on bike lanes and sidewalks, failure to stop for pedestrians at zebra crossings, failure to stop at red lights etc go unpunished – thereby generating among drivers an attitude of “anything goes”. A large number of participants singled out “education of drivers and enforcement of traffic

rules” as one of the measures that would most significantly improve safety for pedestrians and bike riders. More specific suggestions include increasing traffic police presence, installing electronic monitoring devices, focus periodic crackdowns on certain infractions as a means to educate the driving public.

Participants are also critical of taxi and bus drivers. Speeding, jostling at bus stops to get more passengers, not obeying traffic regulations were all mentioned. But in addition to driving skills, respondents feel strongly that those who drive the public need to improve their service attitude.

Taxi and bus company management should supervise their drivers and ensure they are polite, that they stop for elderly or disabled passengers and that they do not abuse passengers (especially migrants and the disabled) by overcharging them. In order to improve supervision and management, respondents suggest two measures: the use of “tip lines” so passengers can report bad driver behaviour to the company; and the reform of public transit driver salaries, linking a driver’s income to his/her performance – including driving safety and service quality.

6.5 Improve the street environment through plantings, lighting, maintenance and sanitation.

Making the street a more pleasant experience for pedestrians was seen by participants as an important way to improve the poor’s transport experience. Identified improvements to the city’s streets include: increased plantings of shade trees; improved street sanitation and garbage removal; repair of street lamps and installation of street lights in areas where they are lacking; improved maintenance of sidewalk surfaces so as to improve footing; increase the number of benches and public restrooms; ensure sidewalk hazards are clearly marked; minimize the number and extent of repair and construction projects that break up the sidewalks. In addition, respondents recommend the following: preserve existing trees during road improvement projects; select plants for the shade they provide and the speed with which they grow; fine those responsible for illegal garbage disposal on the streets; ensure street beautification projects are not limited to large arterials but also include residential streets where people live.

6.6 Crack down on petty crime

Many of our study participants have either been victims or have witnessed petty crime

on the streets of their neighbourhoods. The crimes that affect the most their quality of life and their access to transport include: theft of manhole covers; theft of bicycles; pickpocketing on buses; street robbers.

In order to prevent the theft of manhole covers, participants recommend the following: padlock the manhole covers to the shaft rims; and go after the iron recycling businesses that buy manhole covers from the thieves. It is felt that were this treated more seriously, it would discourage people from stealing

Similarly, the way to reduce bicycle theft, according to participants, is to go after the dealers who trade in stolen bicycles. An increase in supervised, reasonably priced bicycle parking enclosures may also cut down on theft. Preventing bicycle theft would increase the poor's confidence in owning a bike- the one means of transport they can afford.

The freight carriers who haul goods on their backs, on shoulder poles or in handcarts say they are often vulnerable to street robbers. With bales piled high on their carts, the hauler can't see thieves making away with one of the parcels – the haulers are responsible for the goods they cart and must repay the shipper for the missing cargo. But participants did not have feasible recommendations to offer in order to curb this problem.

In discussing public transit, respondents brought up the issue of pickpockets plying the crowded lines at rush hour and boldly stealing from purses and pockets. Some of the thieves work in gangs and in some cases, they carry weapons. Passengers are leary to get involved and stop the thieves even when they catch them in the act. Respondents would want plainclothes police to ride the buses and crack down on these gangs.

During the study, several women linked the assaults they were subjected to with the fact that the streets were poorly lit. Ensuring streets and bus stops are adequately lit is seen as a key measure to increasing street security, particularly for women. .

6.7 Improve traffic regulations

Respondents feel much is needed to ensure traffic regulations are reasonable. Two rules were especially singled out for amendment:

Regulations covering bus stops: At present, bus stops are located along sidewalks, and therefore either inside a designated bike lane or along the path used by bicycles and other NMT. This poses a serious threat to cyclists and other NMT users. Having

designated lanes for buses, with bus stops located on traffic islands while leaving bike lanes clear would improve safety for cyclists and only marginally inconvenience transit riders.

Restrictions on handcarts and trishaws: Existing regulations limit handcart operators to the night-time hours of 5 pm to 7 am – whereas handcart drivers are most in demand during business hours. Handcarts and trishaws are also forbidden to use certain roads and arterials. An infraction of these rules could cost the operator his/her conveyance – and therefore his/her livelihood. There is a demand for the kind of transport service provided by these operators in Wuhan – and the employment it provides to the poorest of the poor – either permanent resident or migrants – is an important social service. Wuhan's municipal government should reconsider the regulations restricting the operation of these vehicles.

6.8 Implement a pro-poor public transit fare system

During discussion segments dealing with public transit, participants were critical of the fare system. They would like a “round number” charged since it is so difficult to make change for the bus. They feel fares should be lowered to Y1. The fixed price fare for one bus ride, irrespective of needed transfers or number of stops on the bus is unfair to those who only go a few stops or who need to transfer to get to their destination. Participants call for a reform of the fare system that would be pro-poor.

The Wuhan government has decreed seniors and people with certain disabilities should ride the buses for free, while the abject poor are eligible to get reduced fare cards. Because drivers are actually private contractors who try to maximize income on their bus line, they are disinclined to cram the bus with non-paying customers. Driver education is needed – supervision of bus service needs to be improved – and drivers who illegally refuse rides to those holding free passes should be penalized.

6.9 Improve police supervision and fairness

During discussions, participants noted that the police are not always fair and reasonable in enforcing traffic regulations; in some cases, the police are accused of negligence, of not being there when they are needed. Their motives are questioned: they issue a flurry of tickets only when they need to collect money; they collect bicycle licensing fees but do nothing to crack down on bike thieves. Police are also accused of discriminating against the poor and migrants – they are more rude and harsh to the poorest of the poor such as freight haulers. Participants suggest police be put through improved education sessions. More importantly, they feel there should be an oversight and supervision system that could be triggered by feed-back mechanisms such as

tip-lines. Participants also suggest police officers' income streams be monitored in order to curb abuse of power and corruption.

6.10 There is a need for public consultations on municipal transport

During all focus group discussions, participants stated they want Wuhan's transport authorities to solicit their views more regularly – although they are unsure about how realistic this is in the present context. This is due to the fact that respondents know that their needs are rarely taken into considerations nor are their views sought by the authorities. Were consultations to be held, participants favour informal discussions where policy makers and program planners could meet the public face to face and hear their views directly – and where they could hear reaction and responses to their suggestions and complaints. Participants view feedback mechanisms such as “hot lines” and comment boxes to be ineffective – the bureaucracy has a tendency to ignore this kind of input. “It is like a stone thrown into the sea,” said one participant.

Participants feel that top transport managers and policy makers need to visit and see for themselves the kind of transport situations the poor face. They think too often transport plans are made by officials working in isolation on drawings in offices. Participants point out that the leadership of the city and of its transportation authorities are people that don't face the same transport barriers than they do. Riding around in air-conditioned luxury cars, it is not possible for them to understand the transport burdens of the poor. Some participants recommend those leaders try to get around as they do for a day or so, in order to understand their situation better.

Disabled people we interviewed also wish to be consulted by those who run Wuhan's transport system. However, they worry that consultations would be to no avail, that their suggestions would not be implemented. They say that without dedicated and earnest transport decision-makers, such a process is useless. They believe their input would be practical and useful to transport planners and would help resolve existing problems – at present, some of these issues have long been discussed but nothing has been done. Poor disabled people believe the media could play a role in exposing the public to some of these problems and help motivate the authorities to take action.

ANNEX 1 Determining Wuhan's poverty profile

A1.1 Characteristics of the RAP sample

The income of poverty-stricken people is sensitive and variable subject to many factors. Not taking errors in registration and data inputting into account (in fact, accidental errors are little, as RAP survey adopts large scale sampling) the income in RAP survey is lower than the real situation due to the stipulations in the resettlement policy: the poorer the family is, the more it gets from government as compensation, therefore, the relocated family tends to conceal the real facts about their income. So the income level indicated in the RAP survey is lower than the real level.

Table A1-1 Distribution of Monthly Income per Person of Different Population Group

istrict	Poor population in the investigation of RAP					The total population in the investigation of RAP				
	Gap	MIN	MAX	Mean	Standard error	Gap	MIN	MAX	Mean	Standard error
Jiangan	397	0	397	65.9	105.4	203800	0	203800	313.5	541.4
Jiangnan	380	0	380	44.2	90.3	400600	0	400600	283.0	1018.7
Qiaokou	390	0	390	59.7	104.6	5500	0	5500	274.6	534.0
Wuchang	390	0	390	54.7	104.4	500430	0	500430	304.9	798.9
Hanyang	390	0	390	58.1	100.6	200060	0	200060	344.6	623.1
Hongshan	350	0	350	56.5	102.1	120000	0	120000	294.6	577.7
Qingshan	350	0	350	46.9	99.1	9000	0	9000	442.3	730.6

We find the average incomes in RAP are higher than in yearbooks except the first quintile. The RAP sample is from some roads (such as Dazhi road, Youyi road, etc.) need to be broadened, the locality of such road located is now becoming the blooming business site, whose road can't meet the need of business, it is reasonable that the income of local population is relatively high. The RAP sample is a cluster sample which we just draw from some high income population.

Table A1-2 The comparison of the average income between yearbook and RAP sample
Unit: yuan per household

	Average income of 2001 from yearbook	average income of RAP
The first quintile	252.88	223.16
The second quintile	394.49	643.32

The third quintile	513.20	1035.08
The fourth quintile	678.55	1619.26
The fifth quintile	1101.13	4732.12

A1.2 Correlating income and housing size

Wuhan Urban Transport Project covers the road improvement and expansion projects of 7 districts (Jiangan District, Jiangnan District, Qiaokou District, Wuchang District, Hanyang District, Hongshan District, and Qingshan District). In order to know the amount of relocation work, and to provide data basis for formulating “Resettlement Action Plan”, the Project Office investigates the economical condition of the project-affected family twice in 2001-2002.

The objectives of the investigation include the demographic features, economical conditions, family properties, housing condition and attitudes towards the project of the affected persons. We will make a special effort to analyze the quantitative relations between living area and income.

There are 8,562 valid cases in the RAP survey, which include family household, enterprises and institutions, and public facilities. As the emphasis of our research is on the correlation between living area and income, we carefully screen out cases of enterprises and institutions and public facilities from 8, 562, and 5, 393 family households are left for case study. For the distribution of cases in each district, please see table A1-3.

Table A1-3 Distribution of Inquired Households in RAP Survey

District	Sample (household)	Proportion (%)
Jiangan	1576	29.22
Jiangnan	726	13.46
Qiaokou	199	3.69
Wuchang	1358	25.18
Hanyang	788	14.61
Hongshan	701	13.00
Qingshan	45	0.83
Total	5393	100.00

Among the 5, 393 households, the monthly income per person is 1, 430 Yuan, the living area is 49.1 m² per household. For specific situation of each district, please see table A1-4.

Table A1-4 The Monthly Income per Person and Living Area per Household

District	Income per capita in a month (yuan)	Housing per household (sq. m.)
Jiangan	1402	47.2
Jiangnan	1121	39.1
Qiaokou	1259	42.3
Wuchang	1265	47.9
Hanyang	1310	45.1
Hongshan	2158	69.5
Qingshan	3831	104.9
Total	1430	49.2

We analyze the correlation between monthly income per person and living area per household in spss 10.0. See the result in table A1-5.

Table A1-5 Relativity of Income Per Person and Living Area Per Household

District	Relative Coefficient	Significance level
Jiangan	0.90	7.19584×10^{-23}
Jiangnan	0.86	3.60936×10^{-22}
Qiaokou	0.90	4.46854×10^{-20}
Wuchang	0.81	9.11032×10^{-23}
Hanyang	0.88	2.90033×10^{-22}
Hongshan	0.93	3.97778×10^{-22}
Qingshan	0.94	5.82984×10^{-17}
Total	0.88	2.43158×10^{-23}

From table A1-5, we can find the results have the following features:

The correlation coefficient between the monthly income per person and living area per household is 0.88, ($p \approx 0 < 0.05$), which is quite outstanding and significant, indicating high positive correlation of the two.

For 4 of the seven districts, the coefficient is or more than 0.9. The four districts include Jiangan District, Qiaokou District, Hongshan District, and Qingshan District, which take up 51.1% of the affected districts. The correlation coefficient are respectively 0.9 ($p \approx 0 < 0.05$), 0.9 ($p \approx 0 < 0.05$), 0.93 ($p \approx 0 < 0.05$) and 0.94 ($p \approx 0 < 0.05$). Income per person and living area per person is highly positively related.

The other 3 affected districts, Jiangnan District, Wuchang District, and Hanyang district

take up 48.9% of the affected districts, the correlation coefficients of which are more than 0.80, they are respectively 0.86($p \approx 0 < 0.05$), 0.81($p \approx 0 < 0.05$) and 0.88($p \approx 0 < 0.05$). Income per person and living area is highly positively related.

From the above analysis, we can draw the conclusion that income per person and living area per person is highly positively correlated. That is to say, people with high income possess more living area, and vice versa.

It is natural that some researchers have good reasons to doubt about the conclusion, for house is only one of the choice that consumers make, and rich people do not necessarily choose big houses; secondly, because income is a sensitive subject, people's answer to the question might not be objective due to the purpose of the survey, so error inevitably exists. For example, in RAP survey, according to relevant policy, poverty-stricken people can enjoy preferential policy, so some people might conceal the truth of its income level. Therefore, the income level of this survey might be lower than the actual level.

As the above possibility could possibly refute our conclusion, so we are cautious about the validity of RAP survey data and the rationality of our conclusion. We think the above-mentioned factors are not adequate to repudiate the conclusion that income and living area are positively correlated. The reasons are as follows: (1) On the one hand, house is a necessity for our daily life; on the other hand, house is a symbol of wealth, and is also a luxury.

In China, house is still a rare commodity (which can be seen from the price of houses). To buy which kind of house is a choice for consumers. And as house is a necessity, so people have to make a choice. It is natural that people of high income tend to buy bigger houses, though not all people of high income choose bigger houses. But from the perspective of statistics, it is safe to say people of higher income have houses of larger area, and people of lower income have houses of smaller area. (2) As is proved by mathematics, in correlation analysis, systematic errors would not affect correlation coefficient. So the above-mentioned correlation coefficient is sound and reasonable. (3) Since living area is closely related to compensation, provided the living area is not correct, the affected person will not sign on the confirmation book. So the validity of living area can be guaranteed.

As the correlation coefficient between living area and income is tenable in statistics, we can remedy the defects that there is no index of income in census data. The specific process is: classify all the cases in census data into 5 grades according to living area, the grade of cases with the smallest living area corresponds with the grade of cases with lowest income. The cases of this grade takes up 20% of all the cases in census, and thus

the database of people of lowest income in census is set up, which provides a basis database for subsequent analysis of the features of poverty-stricken people.

A1.3 Drawing Wuhan’s poverty profile

In this section of the study, we use the disaggregated census data derived using the above methodology to outline the profile of poverty in Wuhan.

A1.3.1 The gendered nature of poverty

An analysis of both the RAP and the census compares poorest quintile with general population and finds there is a feminization of poverty taking place in Wuhan. Clearly, women are over-represented among the poor. The male:female ratio among the poorest quintile is 99.71 in the RAP survey; and 86.07 in the census. (See table A1-6)

Table A1-6 Men and women among the poor

	Male		Female		Ratio Male/ female	Total	
	Population	%	Population	%		Population	Proportion (%)
Poorest quintile population in RAP survey	1391	49.9	1395	50.1	99.71	2786	100
Poorest quintile population in the census	40280	46.2	46800	53.8	86.07	87160	100
Total population in the census	4163890	51.74	3884201	48.26	107.2	8048091	100

Source: Wuhan RAP survey (2001-2002) and 2000 Census.

A1.3.2 Age and poverty

As table A1-7 indicates below, the older and younger age groups are over-represented among Wuhan’s poorest quintile population. This is consistent with other findings regarding family size and dependency ratios below. Younger working age people (20-39) are under-represented among the poor, while older working age people (40-49) are over-represented. In addition, recent retirees

(50-59) are under-represented among the poor.

Table A1-7 Age Distribution of Different Population Groups (%)

Age categories	Poorest quintile in RAP survey	Poorest quintile in the census	Total census population
0-9	13.2	12.1	9.9
10-19	19.4	19.2	18.4
20-29	8.8	8.3	16.9
30-39	15.5	18.5	19.5
40-49	17.6	16.3	15.5
50-59	6.7	8.4	9.4
60+	18.8	17.2	10.4

Source: Wuhan RAP survey (2001-2002) and 2000 Census

A1.3.3 Educational attainment

As Table A1-8 reveals, most of the poor have at most a junior middle school education. The poorest quintile are under-represented among the college and university graduates. The poor however are over-represented among those with vocational education

Table A1-8 Education and the poor (%)

	Poorest quintile in RAP survey	Poorest quintile in the census	Total census population
Illiterate and quasi-illiterate	9.0	8.5	6.4
Elementary	20.4	21.4	24.5
Middle school	40.5	39.7	34.5
Senior middle school and vocational senior school	24.3	22.8	15.2
College and other higher education	5.8	7.6	19.4
Total	100.0	100.0	100.0

Source; Wuhan RAP Survey (2001-2002), 2000 Census

A1.3.4 Family size and dependency ratios

As Table A1-9 indicates, family size among the poorest quintile tends to be larger than among the general population – and this is consistent throughout the city’s seven districts.

Table A1-9: Family Size Among Different Population Groups (persons/family)

	Poorest quintile in RAP survey	Poorest quintile in the census	Total census population
Jiangan	3.97	3.21	3.05
Jiangnan	3.86	3.05	2.91
Qiaokou	3.78	3.13	2.99
Hanyang	4.03	3.24	
Wuchang	3.91	3.17	2.96
Qingshan	3.84	3.25	3.02
Hongshan	3.76	3.09	2.97
Wuhan	3.87	3.29	3.17

Source: Wuhan RAP Survey (2001-2002), 2000 Census

Comparatively speaking, poor families tend to have a greater number of people depending on each income earner – the dependency ratio. In the RAP survey, poorest quintile income earners each supports 3.97 dependents – one person more to support than in the general population. In the census, poorest quintile income earners have on average 3.67 dependents. In Jiangnan district, among the relocated households, the gap with the average population is even greater. (See table A1-10)

Table A1-10 Dependency Ratios of Different Population Group (Income earner : Dependents)

	Poorest quintile in RAP survey	Poorest quintile in the census	Total census population
	1:3.56	1:3.73	1:3.07
Jiangnan	1:4.03	1:3.51	1:2.56
Qiaokou	1:4.12	1:4.03	1:3.12
Hanyang	1:4.14	1:3.63	1:3.13
Wuchang	1:3.80	1:3.31	1:3.14

	Poorest quintile in RAP survey	Poorest quintile in the census	Total census population
Qingshan	1:4.02	1:3.64	1:3.17
Hongshan	1:4.15	1:3.82	1:3.34
Total	1:3.97	1:3.67	1:3.08

Source: Wuhan RAP Survey (2001-2002), 2000 Census

A1.3.5 Occupation

Poor people tend to list as their occupations farming (crops), industry, and services (see Table A1-11). The “commerce and services” category includes both the formal and the informal sector, where more of the poor would find work or engage in street vending and services. The poor are under-represented among the more technical and managerial occupations. The “other” category includes manual and casual labour, which explains why the poor are over-represented in this category. In addition, the reason why the poor would be under-represented among those involved in animal husbandry is the larger investment and steady cash-flow required for this kind of more lucrative farming in the peri-urban districts, precluding poorer people from taking part.

Table A1-11 Occupations of Different Population Group (%)

	Poorest quintile in RAP survey	Poorest quintile in the census	Total census population
Farming (crops)	26.09	0.20	8.24
Farming (animals)	3.62	0.68	24.73
Industrial worker	22.10	40.23	22.61
Commerce and services	25.72	29.75	21.04
Teacher, clerical work	0.36	3.38	4.01
Management	6.16	13.39	19.37
Others	15.94	12.37	0.02
Total	100	100	100

Source: Wuhan RAP Survey (2001-2002), 2000 Census

A1.3.6 Disabled people and poverty

There is no doubt that the challenges brought about by all physical and mental disabilities tend to guarantee that, without external support, the disabled person will live

a life of poverty. The disabled are often less educated and have fewer skills. Transport and other services are less accessible to them. In the competition with able-bodied people, they are always at a disadvantage. An indication of their low standard of living is the fact that the Wuhan Municipal government provides the full MLSS subsidy to the disabled (210 Yuan per month). Official statistics allow us to draw a more specific profile of Wuhan's disabled population (see Table A1-12).

For administrative purposes, the disabled are classified into 4 categories of impairment or disability: physical (paraplegic, quadraplegic and others), visual, hearing and mental. According to 2002 statistics provided by Wuhan Association of the Disabled, mentally disabled people comprise the largest group among Wuhan's disabled population (38.56%). The city's disabled population represents roughly 4% of the permanent resident population of Wuhan's 7 urban districts.

Table A1-12 Distribution of the Disabled in Each District

District	Total disabled	Visually impaired	Hearing impaired	Physically disabled	Mentally disabled
Jiangan	33805	4942	11588	4942	12333
Jiangnan	22500	3285	7717	3286	8212
Qiaokou	27000	3952	9254	3948	9846
Hanyang	21520	980	1262	13773	5505
Wuchang	45706	9891	9649	12696	13470
Qingshan	6873	496	445	2560	3372
Hongshan	28100	4200	900	4200	18800
Proportion	100	14.96	22	24.48	38.56
Total	185504	27746	40815	45405	71538

Source: Wuhan Disabled Persons' Association, 2002.

ANNEX 2: Distribution of MLSS Recipients and Migrants in Wuhan

The “Minimum Living Standard Scheme” data provided by the Wuhan Civil Affairs Bureau is geo-referenced and allows for analysis of the concentration of abject poverty (the poorest 4%) in the 7 districts and 85 sub-districts that constitute Wuhan’s urban areas. Table A2-1 presents the data on abject poverty.

The 2000 Census provides geo-referenced information on migrants throughout the city’s 85 sub-districts. Table A2-2 presents this data.

Table A2-1 Distribution of MLSS Recipients in Wuhan

street	Population in 2002	Poor population	Poor household	Proportion of poverty (%)
Jiangan district	688969	37965	14245	5.51
Dazhi street	28525	1886	680	6.61
Shanghai street	30018	1140	444	3.80
Yiyuan street	22217	1949	704	8.77
Chezhan street	26703	3250	1229	12.17
Siwei street	30242	2494	877	8.25
Qiuchang street	35773	2329	855	6.51
Xima street	57302	2601	953	4.54
Taibei street	33012	1011	342	3.06
Huaqiao street	106888	2659	990	2.49
Laodong street	70050	3918	1484	5.59
Yongqing street	31464	2615	942	8.31
Erqi street	88448	4087	1531	4.62
Xincun street	64970	3430	1304	5.28
Danshuichi street	44243	2727	1139	6.16
Daishan street	13904	1292	505	9.29
Kanjiaji street	5210	577	266	11.07
Jiangnan district	598555	22424	8656	3.75
Minzu street	41778	1322	574	3.16
Minquan street	37625	2101	926	5.58
Hualou street	20919	1037	423	4.96
Mancun street	26031	974	409	3.74
Miyi street	31573	1433	603	4.54

street	Population in 2002	Poor population	Poor household	Proportion of poverty (%)
Qianjin street	25547	1520	617	5.95
Shuita street	19597	1337	556	6.82
Xinhua street	38702	1508	589	3.90
Wansong street	95016	2046	821	2.15
Beihu street	31244	1065	410	3.41
Tangjiadun street	77818	1129	479	1.45
Hanxing street	74168	1779	701	2.40
Changng street	78537	5173	1548	6.59
Qiaokou district	689066	26380	10441	3.83
Yijiadun street	89637	3605	1446	4.02
Hanjiadun street	55876	3161	1239	5.66
Zongguan street	50502	3431	1336	6.79
Hanshuiqiao street	65266	3104	1214	4.76
Baofeng street	64068	2140	808	3.34
Ronghua street	45176	2195	846	4.86
Congren street	40632	1913	822	4.71
Hanzhong street	27980	1776	689	6.35
Hanzheng street	136353	3579	1471	2.62
Liujiating street	45108	1174	447	2.60
Changfeng county	68468	302	123	0.44
Hanyang district	446544	25386	9654	5.68
Zhoutou street	39070	1579	633	4.04
Jianqiao street	50842	3496	1327	6.88
Yingwu street	47061	2946	1124	6.26
Cuiwei street	50842	3338	1248	6.57
Qingchuan street	24546	1214	460	4.95
Yuehu street	39009	1788	703	4.58
Erqiao street	45208	2306	872	5.10
Wulidun street	64666	3256	1233	5.04
Qinduankou street	57698	4960	1880	8.60
Jiangdi village	27602	503	174	1.82

street	Population in 2002	Poor population	Poor household	Proportion of poverty (%)
Wuchang district	980211	42950	16393	4.38
Yangyuan street	87112	2829	1107	3.25
Xujiapeng street	97698	2575	965	2.64
Xinhe street	41856	2500	1009	5.97
Jiyuqiao street	37730	3941	1488	10.45
Zhonghualu street	37274	3103	1201	8.32
Liangdao street	62165	3453	1398	5.55
Huanghelou street	52277	3852	1496	7.37
Ziyang street	63257	4906	1840	7.76
Baishazhou street	58724	4964	1898	8.45
Shouyilu street	78292	3619	1356	4.62
Zhongnanlu street	136723	3429	1240	2.51
Shuiguohu street	162124	2976	1057	1.84
Luojiashan street	57743	138	53	0.24
Shidong street	7236	665	285	9.19
Qingshan district	445420	14763	5747	3.31
Honggangcheng street	37686	792	329	2.10
Xingouqiao street	60914	1868	729	3.07
Hongweilu street	78923	2802	1008	3.55
Yejin street	66451	764	320	1.15
Ganghuacun street	80375	1063	416	1.32
Gongrencun street	27769	2982	1147	10.74
Qingshan town	25795	2209	890	8.56
Changqian	18164	1169	415	6.44

street	Population in 2002	Poor population	Poor household	Proportion of poverty (%)
street				
Wudong street	18282	475	209	2.60
Baiyushan street	31061	639	284	2.06
Hongshan district	610866	14029	5775	2.30
Lounan street	199700	3860	1467	1.93
Guoshan street	196516	3151	1200	1.60
Shizishan street	59021	1063	474	1.80
Zhangjiawan street	13476	1742	810	12.93
Gehua street	5303	2405	1035	45.35
Huashan street	29140	621	282	2.13
Hongshan country	87886	122	52	0.14
Jiufeng country	19824	1065	455	5.37
Total	4459631	183897	70911	4.12

Source: Wuhan Statistical Yearbook, 2000.

Table A2-2: Distribution of Migrant Population in Wuhan

Sub-districts	Total Migrant Population	Permanent Resident Population	Total Population	Proportion of Migrants (%)
Shanghai street	7865	30018	37883	20.76
Dazhi street	8850	28525	37375	23.68
Yiyuan street	5880	22217	28097	20.93
Chezhan street	8265	26703	34968	23.64
Siwei street	8437	30242	38679	21.81
Yongqing street	9956	31464	41420	24.04
Xima street	19176	57302	76478	25.07
Qiuchang street	10579	35773	46352	22.82
Laodong street	20375	70050	90425	22.53
Erqi street	35687	88448	124135	28.75
Xingcun street	20983	64970	85953	24.41
Danshuichi street	14998	44243	59241	25.32

Sub-districts	Total Migrant Population	Permanent Resident Population	Total Population	Proportion of Migrants (%)
Daishan street	6496	13904	20400	31.84
Taibei street	13766	33012	46778	29.43
Huaqiao street	53545	106888	160433	33.38
Kanjiaji street	3258	5210	8468	38.47
Houhu county	22127	36897	59024	37.49
Jiangan district	270243	725866	996109	27.13
Minzu street	17962	41778	59740	30.07
Hualou street	6608	20919	27527	24.01
Shuita street	5479	19597	25076	21.85
Minquan street	11569	37625	49194	23.52
Mancun street	11536	26031	37567	30.71
Minyi street	10091	31573	41664	24.22
Xinhua street	11308	38702	50010	22.61
Wansong street	31682	95016	126698	25.01
Tangjiadun street	47838	77818	125656	38.07
Beihu street	12079	31244	43323	27.88
Qianjin street	7214	25547	32761	22.02
Changing street	58618	78537	137155	42.74
Hanxing street	55410	74168	129578	42.76
Jianghan district	287394	598555	885949	32.44
Yijiadun street	32698	89637	122335	26.73
Hanjiadun street	17337	55876	73213	23.68
Zongguan street	19591	50502	70093	27.95
Hanshuiqiao street	22679	65266	87945	25.79
Baofeng street	19567	64068	83635	23.40
Ronghua street	14745	45176	59921	24.61
Congren street	17452	40632	58084	30.05
Hanzong street	10117	27980	38097	26.56
Hanzeng street	81083	136353	217436	37.29
Liujiatong street	20916	45108	66024	31.68
Changfeng county	48375	68468	116843	41.40
Qiaokou district	304560	689066	993626	30.65
Cuiwei street	14932	50842	65774	22.70
Jianqiao street	12805	50842	63647	20.12

Sub-districts	Total Migrant Population	Permanent Resident Population	Total Population	Proportion of Migrants (%)
Wulidun street	26088	64666	90754	28.75
Qingchuan street	9550	24546	34096	28.01
Yuehu street	14634	39009	53643	27.28
Yingwu street	18809	47061	65870	28.55
Zhoutou street	14661	39070	53731	27.29
Qinduankou street	31593	57698	89291	35.38
Erqiao street	16323	45208	61531	26.53
Jiangdi county	13527	27602	41129	32.89
Yongfeng county	32457	59895	92352	35.14
Hanyang district	205379	506439	711818	28.85
Jiyuqiao street	12122	37730	49852	24.32
Yangyuan street	24209	87112	111321	21.75
Xujiapeng street	30598	97698	128296	23.85
Xinhe street	10450	41856	52306	19.98
Liangdao street	19468	62165	81633	23.85
Zhonghualu street	10474	37274	47748	21.94
Huanghelou street	14076	52277	66353	21.21
Ziyang street	24758	63257	88015	28.13
Baishazhou street	20843	58724	79567	26.20
Shouyilu street	22472	78292	100764	22.30
Zhongnanlu street	46502	136723	183225	25.38
Shuiguohu street	40651	162124	202775	20.05
Luojiashan street	13355	57743	71098	18.78
Shidong street	911	7236	8147	11.18
Wuchang district	290889	980211	1271100	22.88
Hongweilu street	17544	78923	96467	18.19
Ganghuacun street	12225	80375	92600	13.20
Yiejn street	12800	66451	79251	16.15
Xingouqiao street	11658	60914	72572	16.06
Honggangcheng street	8375	37686	46061	18.18
Gongrencun street	14804	27769	42573	34.77
Qingshan town	6805	25795	32600	20.87
Chang qian street	8348	18164	26512	31.49
Wudong street	2462	18282	20744	11.87

Sub-districts	Total Migrant Population	Permanent Resident Population	Total Population	Proportion of Migrants (%)
Baiyushan street	8183	31061	39244	20.85
Qingshan district	103204	445420	548624	18.81
Luonan street	65217	199700	264917	24.62
Guanshan street	45830	196516	242346	18.91
Shizishan street	14459	59021	73480	19.68
Zhangjiawan street	4862	13476	18338	26.51
Hongqi street	445	524	969	45.92
Gehua street	1120	5303	6423	17.44
Huashan street	2860	29140	32000	8.94
Hongshan county	69156	87886	157042	44.04
Jiufeng county	2921	19745	22666	12.89
Hongshan district	206870	611311	818181	25.28
Total	1668539	4556868	6225407	26.80

Source: Wuhan 2000 Census

ANNEX 3: Focus Group Content Analysis

During investigation, we asked poor people of each interviewed group to rank both the problems they encounter with each main mode used, and the solutions they prefer to deal with these issues.

In this annex, we present several tables that summarize the content of the focus group discussions. Table A3-1 provides the rankings done by the groups themselves. Table A3-2 provides content analysis which is done by tabulating the number of times a given issue is brought up in a group; this “frequency analysis” also allows us to gauge how intensely an issue preoccupies people.

Table A3-1: Problem and Solution Rankings – tabulated from 18 FG rankings

	No.1	No.2	No.3	No.4	No.5
PROBLEM					
Walking	Motor vehicles don't obey traffic rules.	Business takes up roads.	Environment is poor and green area is insufficient.	Traffic facilities are insufficient.	Traffic facilities are inappropriately deployed.
Bicycle	Traffic facilities are deficient.	Parking is inconvenient.	Bicycles are always easily stolen.	Motor vehicles don't obey traffic rules.	Traffic police don't reasonably execute laws.
Bus	Parking at stops is not standardized.	Passengers have to pay small changes for fare.	Drivers don't obey traffic rules.	Passengers are not informed of stops.	Station distribution is not reasonable.
SOLUTION					
Walking	Strengthen traffic	Ban various forms of	Increase green area.	Set up more traffic	Repair and level road surfaces in time.

	management.	road occupation.	lights.	
Bicycle	Increase special driveways.	Strengthen traffic management.	Set up more traffic lights.	Improve quality of traffic police. Lock up shaft lids. Punish heavily thieves and buyers of stolen bicycles. Clamp down trading rings for stolen bicycles.
Bus	Charge integral fare without small change.	Improve quality of drivers and conductors.	Increase plainclothes policemen.	Extend bus service time. Reasonably distribute stations. Increase buses of new type.

Table A3-2 Frequency Content Analysis – 18 focus groups

items	Opinion	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Problems of walking	Poor environment(few trees, few rest place)	10	3			2	1	1	3	1			3	2	1	5	3	5	3	20 (46.5%) /23(53.5%)	14
	Bad road quality (stolen well lids and uneven road)	3				2	2				3			5	1	1	1	4	2	9(37.5%)/15(62.5%)	10
	Unsafe crossings		5	1		2		2		1		2		1			2		4	10(50%)/10(50%)	9
	Unstandard parking of bus	3					1	1	1	1			1						1	1(14.2%)/6(85.8%)	5
	Some drivers rush on roads	4				1	1	1	1	1						1		1	1	4(28.6%)/10(71.4%)	9
	Traffic jam because building roads		1												3	1			4(80%)/1(20%)	3	
	Thief																	1	1	4(67%)/2(33%)	3
	Some people cross over traffic railings																	1	5	5(83%)/1(17%)	2
	Pollution		5															1	2	7(87.5%)/1(12.5%)	3
	Being bullied by natives											1	1					1	1	2(50%)/2(50%)	4

<i>items</i>	<i>Opinion</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>H</i>	<i>I</i>	<i>J</i>	<i>K</i>	<i>L</i>	<i>M</i>	<i>N</i>	<i>O</i>	<i>P</i>	<i>Q</i>	<i>R</i>	<i>S</i>	<i>T</i>	
	Roads are occupied by stalls	10		1			1		1	6					1		3			14(50%)	14(50%)	7
	Some pedestrians do not obey traffic rules								5	1		3		2	1		2			6(42.9%)	8(57.1%)	6
	Wrong zebra crossing													3		2				0/5(100%)		2
	Few traffic policeman		2				1	2					1	1						4(57.1%)	3(42.9%)	5
	Few public latrine			3				4		2			1							4(40%)	6(60%)	4
	Unmanaged undergroundcrossings									3										0/3(100%)		1
Problem of bus	Few bus in suburber, and the quality of the buses is bad	2		3	4	4	2	2	4		2			2	1		1	2	5	21(61.7%)	13(38.3%)	13
	Unreasonable price	10	5			3	5	1	2	5	4	4	1	2		6	2			19(38%)	31(62%)	13
	Unreasonable distribution of bus lines									2	5								4	4(36.3%)	7(63.7%)	3
	Long distance between bus stop and dwelling					2	1		1	1	2					3	2			8(57.1%)	6(42.9%)	8
	Bad services					2	1		1			1	3	5	1		4	3	6	17(65.4%)	9(34.6%)	11
	Unnorm stopping		10				4	1	3		2	4	1	4					3	25(80.6%)	6(19.4%)	9
	Rushing	3	2			6		1		2						1	1		2	17(80.9%)	4(19.1%)	9
	Traffic jam because construction																		1	1(100%)	0	1
	Thieves on buses	5	5						1	4		2		2		1	5		2	12(44.4%)	15(55.6%)	9
	Can not use the bus favoured proves	1						1												1(50%)	1(50%)	2
Problem of bicycle	Few sun-shading board in bus stops				3		2													4(80%)	1(20%)	2
	Few trees												1	1						1(50%)	1(50%)	2
	Bad roads		5									3	6	6			5		2	12(57.1%)	9(42.9%)	5
	Pollution													3						3(100%)	0	1
	Thieves		10			4	3			4			4	6		6	6		1	24(52.1%)	22(42.9%)	10

items	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	
Opinion																					
Bicycle lanes are occupied		4			6	6	4	2	3	2	3	2	1		6	2	4	2	21(50%)	21(50%)	12
Few parking					1		3	2				1	1				1	1	4(44.4%)	5(55.6%)	7
No street lam, unsafe at night					2	1											1		1(25%)	3(75%)	3
Few traffic lighting						1										1			2(100%)	0	2
Unreasonable traffic rules for motor vehicles					6	6	5	2	2	1	1			4	4		2	1	6(22.2%)	21(77.8%)	8
Traffic policeman are not strict						6				2						3	4	1	16(69.5%)	7(40.5%)	6
Dredging the sewers on time													2				2		0/4(100%)		2
Strengthen managing and educating to drivers	3	3	1	2			2	1	1	1	2	2	3	1	1	3		1	10(41.7%)	14(58.3%)	13
Forbidden motor taxi													5	1	2		2		5(27.8%)	13(72.2%)	8
Widen roads	2	1		2	2		3	1	3	1	1	1	1	1	2			1	8(57.1%)	6(42.9%)	9
Separated walking lane and vehicle lanes	1	7				1	1	1	2	4			2	1	1	1	1		14(63.6%)	8(36.4%)	11
Clearing rubbish, planting more trees	4	1			2		1	2	2		2	2				2	2	2	8(44.4%)	10(55.6%)	9
Building street lamps, repairing the bad ones on time		5			2	2	2		2		1		4	3		2	3	1	13(52%)	12(48%)	10
Building more underground crossing and overline bridge	3	8			5	2	3	2	2	2	3	4	2	1	6	2	1	4	23(50%)	23(50%)	14
Limiting tail gas and noise											1	1	2					3	4 (57.1%)	3(42.9%)	4
Strengthen managing to illegal van taxi			1										2	1	1				1(25%)	3(75%)	4
Building more video monitors														1					1(100%)	0	1
Building traffic lightings on the zebra crossings		3			1		3	1	2	2	2	1	2	2					9(52.9%)	8(47.1%)	9

items	Opinion	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
	Building underground rails and overpassings														2					2(100%)/0	1
Suggestion for bus	Prolonging intervals of traffic lightings	2						2		2		3								6(67%)/3(33%)	4
	Improving quality of bus	1							6						3				2	8(66.6%)/4(33.4%)	4
	Increasing buses and lines in suburban					1	6	6	6	6					3		2		2	16(61.5%)/10(38.5%)	7
	Decreasing price in suburban, and price should be a round number	2	5			6	6	1	6	6	4	2		2			2		1	21(48.8%)/22(51.2%)	12
	Enhancing drivers' quality							6							2					9(100%)/0	3
	Rationalizing bus lines					1										1			1	1(33.3%)/2(66.7%)	3
	Building bus lanes								6										1	4(57.1%)/3(42.9%)	2
	Improving equipments on bus	10							6	6	1	1	1			1	1		3	8(34.7%)/15(65.3%)	7
	Add policeman on buses				3						1	1	1							2(50%)/2(50%)	3
	No overloading															1				0/1(100%)	1
Suggestion for bike	Stop at each parking							1			4									5(100%)/0	2
	Changing bus to decrease noise								1	6										1(14.2%)/6(85.8%)	2
	Departure on time	2					1													1(33.3%)/2(66.7%)	2
	Distributing parking reasonable, and building standard parks.	2					6	1												7(77.7%)/2(22.3%)	3
	Separating lanes of bike and motor vhecles										3	2	1			1				10(71.4%)/4(28.6%)	6
	Building managed bike tent					6				6	2			2			3		1	6(30%)/14(70%)	6
	Adding bike lanes		1			6	4		6		1			2					1	10(41.6%)/14(58.4%)	9
	Strengthen infrastructure		10			4			6		3	1	4				2	2		23(88.4%)/3(11.6%)	7
	Punishing thieves more stricted		3			6								1		2	1			4(30.7%)/9(69.2%)	5
	Strengthen management to drivers. Punishing the violating persons more strict						6										1		1	7(100%)/0	3

items	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Opinion												1			1				1(50%)1(50%)	2
Strengthen management to traffic policeman												1							7(100%)0	2
Managing bike licenses reasonably		6										1	1						6(100%)0	2
Planting more trees								5					2						0/2(100%)	1
Managing lid of sewer more strictly												3	6	5	6	5	6	6	58(52.7%)52(47.3%)	18
Desire to be consulted	10	10	6	7	6	6	6	6	6	4	6									
Like to be consulted face to face.	10	10	6	7	6	6	3	4	6	2				5	6	3	4	6	49(58.3%)35(41.7%)	15
Like telephone or suggestion mailbox							3	2		1	6	3	6			2	2		20(80%)5(20%)	8

A: Unemployment,center city, female ; B : Unemployment,center city, male ; C : freighter-carrier and handcart operator; D: participants who earn income through doing

freight transport using a motorized or non-motorized vehicle; E: Unemployment, suburban, female ; F : Unemployment, suburban, male ; G : Seniors(1) ; H : Seniors(2) ;

I :Resettled, female ; J : Resettled, male ; K : Floating people, center city, female ; L :Floating people, center city, male ; M :On-job, center city, female ; N : On-job, center city, male ;

O : On-job, suburban, female ; P : On-job, suburban, male ; Q : Floating people, suburban, female ; R : Floating people, suburban, male ; S : Male/female ; T : Number of the FGs.

ANNEX 4 Focus Group Protocols and Case Study Guide

A4.1 FG Protocol for Vulnerability-Driven Groups

0:00 – 0:10 Introductions

0:10 – 0:30

Travel patterns – *(Discussion warm-up)*

How do you mostly get around? *(Facillitator: get people to enumerate the modes they use most, to the ones they use less – list on flip chart).*

Probe:

Why do you end up using mostly _____ (name mode they mostly use)?

Does the time of day you go out make a difference in the kind of mode you use? If so, why?

Routine trips: what kind of trips do you do every day? (Trip purpose: to shop etc)

Probe:

Any special problems related to these routine trips?

What's the most time consuming (or tiring or inconvenient) trip you do usually? Why is this difficult? What's tough about it? *(List difficulties on flip chart- associated with relevant mode)*

How much of your week's expenses goes to transport?

Special/unusual trips: What kind of trips do you do less often, for special occasion or because of some emergency or going to hospital?

Probe:

Details of special occasions or emergencies – what was happening;

How did you make that trip (mode);

Why did you select that way of getting there?

Availability of transport when you need it?

Any special problem related to those unusual trips?

Preference: What is your favorite way to get around in Wuhan (cost or convenience no object)? Why?

Sum up: Facilitator sums up group situation with respect to main transport patterns.
Ask: is that right?

0:30 – 1:15

Issues with main modes

(Facilitator, focus first on the most frequently or widely used mode type – probably PEDESTRIAN/NMT; then repeat these questions below for the other 2 main mode types: INFORMAL SECTOR TRANSPORT (mamus etc), and PT).

For 3 mode types:

General: What is your experience using _____ (mode) in Wuhan?

Probes: What are the advantages of using this mode? What are the disadvantages? What are the biggest problems, and what do you like best, about travelling around in this way?

Change occurring: What kind of changes have you seen in Wuhan over the past few years that have affected how you get around?

Probes: In what way have these changes affected you? What kind of problems are you facing more frequently now (*Facilitator: list the issues on flip-chart*).

For PT MODE TYPE: show of hands: how many of you use PT?

Probe:

Would you like to use it more?

Why not use it more?

Get people to express their feelings about these factors:

cost of the ticket

ticket price structure (set fare for given distance, no free transfer between routes etc)

routes

distance to bus-stop

frequency of service – off-peak service

reliability of service

safety

At what ticket price (or ticket price structure such as free transfer between routes, or other factors) does it become possible for you to use PT more?

What would you trade-off in exchange for cheaper bus fare? (Example: condition of the buses, restrictions on time of use or routes etc).

1:15 – 2:00

Problems / Barriers experienced by this group of mode users– *During this section, explore the present problems with the group's main transport modes which have been listed on the flip-chart. If the issues below have NOT been brought up, moderator is to ask the group about the issues in a neutral way: "How do you feel about ...?" The issues are listed in order of priority.*

Safety: What are your main safety concerns when you're going around Wuhan either walking or (other main modes they use)?

Probe:

Where do you feel safety is the biggest issue (at crossings? Going along main roads with cars all around? Etc). Are there some specific intersections, stretch of road or area where you feel it's especially unsafe?

What are the main reasons for these safety problems?

What do you do, that you know is not very safe (eg: illegal crossings etc)? How often do you do that?

What changes could make the biggest difference for you in terms of safety? (Probe for specifics: more special lanes, more crossings, better designed intersections to allow them to avoid underpass/overpass etc).

Distances: In what way is the growth of the city having an impact on your work? How are you coping? Possible solutions?

Convenience of / Satisfaction with crossings and other infrastructure (road surface, dividers, bike paths, overpass/underpass): Can you talk about the roads or sidewalks you use, the crossings, the overpasses and underpasses – how satisfied are you with all this infrastructure now?

Probe: How do you feel about:

Quality of road and sidewalk surfaces;

Street and bus-stop lighting at night;

Existence of bike lanes: are there enough? Are they regulated appropriately?

Crossings: how much of a barrier are they? What type of crossing do you like best? Why?

Underpasses and overpasses: do you use them? What are your thoughts about them (convenience, safety, other issues)?

Traffic lights: how do they help or hinder? Are there enough? Are there problems with the way they're operated now?

How do you want to improve these (the items the group has indicated NEED improvement).

Costs: How do they feel about cost of transport, of the various modes?

Probe:

How has that changed over the past few years?

Which costs are most difficult to bear?

Do you have suggestions to make things more affordable for you?

Regulations and enforcement: To what extent are you affected by regulations and enforcement of traffic rules?

Probe:

What kind of regulations are affecting you most (positively or negatively)?

What are your thoughts about how traffic is regulated in Wuhan – for cars, for pedestrians, for bikes?

What improvements in regulations and traffic enforcement would you like to see?

Exposure to weather: In what way is exposure to weather (rain, heat, cold) a factor in your selection of transport mode? Are you willing to spend more to avoid worst weather?

How does this affect your household? Possible solutions?

2:00 – 2:20

Unmet transport needs –

Can you talk about the types of trips you need to do but you don't because it's too difficult to get there?

Probe:

What kind of trips are those (health care, trading, visiting etc)?

What is the problem exactly – too expensive, no bus goes there, what? (*Get people to give examples – list on flip chart*).

How often does that happen?

What do you do if there's an emergency and you need to get somewhere across town as soon as possible?

Probe:

Examples of emergencies you've had to deal with?

How did you cope (or not)?

Is there sometime during the day when nothing is available?

What mode of transport did you use? Why?

How important is the convenience, cost and quality of transport when you decide where to live or work?

Probe:

If you found a job or other opportunity across town (*name far away neighbourhood*) - but we're not talking about making a lot more money... maybe a little more money, something a bit better than what your situation is now, would you take it?

Would you commute every day or would you have to move?

Why would you make that choice?

What about finding good housing, but in a more remote area - would you take it, would you have to change jobs or could you commute? Why?

2:20 – 2:30

Wishlist of measures to improve transport –

What needs to be done to deal with the problems you have ranked?

Get people to discuss each idea – why is this desirable. Rank the solutions suggested.

2:30 – 2:45

Wrap up –

How do you think is the best way for the authorities to take your views into account when changes to the city's transport system are being considered? (Looking for specific governance suggestions, like hotlines, suggestion boxes etc).

Last chance to add anything that hasn't been addressed yet.

Thank participants.

A4.2 FG Protocol for Mode-Driven Groups

0:00 – 0:10 Introduction

0:10 – 0:40

Travel patterns – (*Discussion warm-up*)

Verify that participants use mostly the specific mode for this group through show of hands. (So

you walk/operate mamu etc mostly – this is the main way you get around, is that right?)

Routine trips: what kind of trips do you do every day?

Probe:

Special problems related to these routine trips?

Under what circumstance would you use other modes; how often does that happen?

How much of your week's expenses goes to transport?

Special/unusual trips: What kind of trips do you do less often, for special occasion or because of some emergency or going to hospital?

Probe:

Details of special occasions or emergencies;

How do you make those trips (mode used);

Why do you select that way of getting there;

Any special problems related to these more unusual trips?

Sum up: Facilitator sums up group situation with respect to main transport patterns. Ask: is that right?

0:40 – 1:30

Issues with main mode

(Facilitator, focus on the group's main mode – Pedestrian group, and Tri-cycles (motorized or not) group.)

General: What is your experience doing this kind of work in Wuhan by (walking or mamu or tricycle)?

Probe:

What are the advantages of using this mode to make a living in Wuhan? What are the disadvantages?

What kind of experience do you have dealing with other kinds of traffic (car, truck etc)?

What's the most time consuming (or tiring or inconvenient) trip you do usually? Why is this difficult? What's tough about it? *(List difficulties on flip chart) (Get participants to do ranking to get total score)*

Change occurring: What kind of changes have you seen in Wuhan over the past few years, that affect your work now?

Probe:

In what way have these changes affected you (income, convenience, regulations etc)?

What kind of problems are you facing more frequently now?

What are your biggest difficulties in doing this work that are caused by these changes?

(Facilitator: list the issues on flip-chart).

1:30 – 2:00

Problems / Barriers experienced by this group of mode users–

Safety: What are your main safety concerns in using (walking, tricycle or mamus etc – the mode of the group)?

Probes:

Which location are you most worried about in terms of safety: at crossings, along main roads

with cars all around? Any specific intersection, road or district that's of special concern for safety?

What are the main reasons for these safety problems?

Does time of day make any difference in the kinds of dangers or unsafe situations you are exposed to?

What do you do, that you know is not very safe (eg: illegal crossings etc)? How often do you do that?

What changes could make the biggest difference for you in terms of safety? (Probe for specifics: more special lanes, more crossings, better designed intersections to allow them to avoid underpass/overpass etc).

Health: How do you feel about the air you're breathing as you do your work? (*This is to get at exposure to car exhaust*). What about exposure to the elements as you work – do you feel this has any effect on your health? What about the loads you carry?

Distances: In what ways is the growth of the city having an impact on your work? How are you coping with that? What would make things easier for you in this respect?

Convenience of / satisfaction with crossings and other infrastructure (road surface, dividers, bike paths, overpass/underpass): Can you talk about the roads or sidewalks you use, the crossings, the overpasses or underpasses – how satisfied are you with all this infrastructure now?

Probe: How do you feel about:

Quality of the road or sidewalk surface;

Existence of bike lanes: are there enough for your use? Are they regulated enough so cars don't use them? etc

Crossings – how much of a barrier are they? What type of crossing do you like best? Why?

Underpasses and overpasses: do you use them? How convenient or inconvenient are they? Why?

Traffic lights – how do they help or hinder your work? Are there enough of them? What's the problem with them as they operate now?

How they would want these improved (the items the group has indicated NEED improvement).

Costs: Let's talk about the costs you face in doing your kind of work (walking or tricycle or mamu).

Probe:

What are the largest cost items they face in doing this kind of work?

How has that changed over the past few years?

Which costs are most difficult to bear?

Do you have any suggestions to make things better for you in terms of cutting your costs?

Regulations and enforcement: To what extent are you affected by regulations and enforcement of traffic rules?

Probe:

What kind of regulations are affecting you the most?

What kind of rules or regulations are you the most fearful about?

How do you feel about the way the authorities regulate car traffic?

What improvements in regulations and traffic enforcement would be most beneficial to you?

2:00 – 2:20

Wishlist of measures to improve transport – *Explore here the participants' own ideas of how transport could be improved for them. The idea here is not to let what is thoughts to be "possible" or "practical" deter participants – the ideas thrown out should not be censored. Get people to discuss each idea – why is this desirable. And rank the solutions by order of preference.*

2:20 – 2:30

Wrap up –

How do you think is the best way for the authorities to take your views into account when changes to the city's transport system are being considered? (Looking for specific governance suggestions, like hotlines, suggestion boxes etc).

Last chance to add anything that hasn't been addressed yet.

Thank participants.

A4.3 Case Study Guide

0:00 – 0:15

Introduction –

0:15 – 0:30

A bit about the subject's history, about themselves: How long have you been disabled... how did it happen...what was it like when you were a kid, when you were growing up...Education received... work history... income/wealth situation (if married and has kids, ask about that too).

0:30 – 0:45

The subject's daily life: Take me through a regular day for you... from the time you get up until you go to bed. What are your daily tasks in and out of the house? What special problems are caused by your disability? How do you deal with those? How does your disability affect how you get around in Wuhan?

0:45 – 1:05

Transport use now – Explore the subject's main modes of getting around – some of this will be

disability-driven, but not necessarily. Ask about transport use, including trip purpose, mode use, frequency, distance, cost; clarify why subject makes those choices; get a sense of the subject's satisfaction with the transport options open to him/her. Find out if they're using PT or did in the past – if they're not using it now, why not – would they use it if...? How much of the subject's weekly expenditures are on transport (get an approximate, average figure or percentage).

1:05 – 1:25

Barriers to transport access/costs of present transport options– Explore the problems with the subject's present transport options (be it walking, wheelchair, tricycle etc). Do they notice a change in Wuhan for transport, road safety, traffic, convenience of PT etc etc? What changes? How have these changes affected them? Explore how present transport options may be limiting the subject's life and opportunities – ie: where they live, where they work, where they trade, where they get health care, their kids' education, recreation etc. Would they move to a place where transport was more convenient for them? Get a list of the most inconvenient, dangerous, unpleasant things related to transport in Wuhan for them right now and get them to rank this list (most inconvenient to least).

1:25 – 1:45

Unmet transport needs – Explore circumstances where the subject needed to use a form of transport and it wasn't available to them – what kind of circumstances are those? How often does it happen? What if there's an emergency and they need to get somewhere fast, how do they deal with this? What types of emergencies have happened? How often?

1:45 – 2:00

Wishlist of measures to improve access – Explore here the subject's own ideas of how transport access could be improved for them. If they were mayor for a day, what would they do to improve disabled people's access to transport? What would they do about roads? Sidewalks? Bike lanes? Crossings? Underpasses/overpasses? Public transit? Get them to rank options they prefer if possible. How would they like to see their input taken into account when the city considers transport changes?