

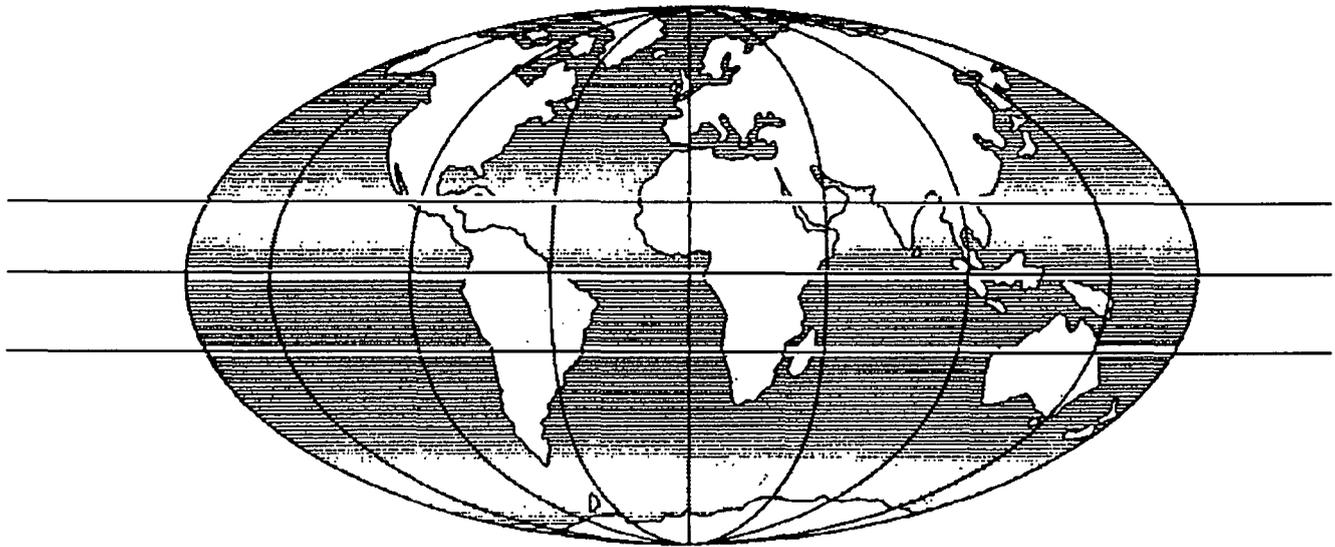


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**SUBVERTING SUSTAINABILITY? -
INFRASTRUCTURAL AND CULTURAL BARRIERS
TO CYCLE USE IN ACCRA.**

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Abstract

This paper is a product of four simultaneous pilot studies of urban transport in Accra, Ghana. Here, using Accra as a case study, we explore attitudes to cycling amongst Africa's urban poor and the implications of such findings for the promotion of cycle use as a low-cost third world solution to transport problems. Key findings are: the high cycle cost due to difficulties in obtaining the finance to purchase bikes inhibits low income ridership; the mixed road use patterns of urban Ghana inhibit the use of cycles; and substantial variations in levels of ridership exist as between different low income communities. These latter 'cultural' differences are explained by strong migration links between the areas with higher ridership levels and Northern areas of Ghana where cycling is a more common practice. The paper then considers the policy consequences of these understandings in the context of current discussions of sustainable transport policy in the developing world.

1. INTRODUCTION.

Economic liberalisation programmes have been implemented in countries across Africa with the intention of encouraging the efficient operations of markets and the reforming of public sector enterprises. One aspect of these liberalisation programmes has been the changing ownership of urban public transport, often resulting in an increase in fares. This has a direct effect upon the urban poor who are forced to absorb such increases into their meagre household budgets if they are to continue to carry out employment and educational pursuits and other essential economic and social activities that they pursued before the fare increases (Maunder and Mbara, 1994). Additionally, they must also make decisions about who in the household is allowed to make the more expensive motorised transport trips and who must resort to slower, cheaper modes. This decision-making process is often influenced by the relationships of power within the household and is affected by age and gender. The male head of household will often remain travelling by public transport leaving female household members, who may earn more income for the household, to walk. In urban Africa this can sometimes mean very long distances being walked and large loads being carried to work and trading locations.

In Asia, cycling is a much more commonplace means of travel amongst the urban poor. The use of this mode allows sudden changes in transport costs to be better absorbed as trips to certain activities can still be effected as journey costs by bicycle are very low.

In an effort to improve the ability of the African urban poor to travel and to improve the urban transport system generally, the World Bank through its Sub Saharan Africa Transport Policy (SSATP) programme has initiated research into urban non-motorised transport. This research has taken the form of case studies in East Africa and francophone West Africa looking at ways of increasing the use of bicycles by Africa's urban poor.

In parallel, the Overseas Centre of the UK Transport Research Laboratory has conducted, as part of its Overseas Development Administration-funded programme of research, a collaborative study with the Ghana Ministry of Transport and Communications and the University of Ghana, on attitudes to cycle use in Accra, Ghana. This was part of a more extensive research programme that has looked at the transport patterns and travel behaviour in urban Ghana. This wider study has also looked at the organisation of travel and activities within low-income households; the relative roles of male and female market porters and female market traders use of informal public transport modes.

The research reported in this paper reports on in-depth qualitative interviews with bicycle owners and non-bicycle owners in Nima and Jamestown in Accra, Ghana. These two low-income residential areas were chosen after observation appeared to illustrate a difference in cycling level within the two communities. 34 bicycle owners and 35 non-owners were interviewed and these reported on the ownership/non-ownership experiences of 260 people. The paper also draws on information from three other surveys conducted at the same time as part of the transport patterns and travel behaviour study. The first is a survey on the social organisation of portering in Accra where 117 porters, 72 male and 45 female, were interviewed. This reports on the gender divisions of access to wheeled technology, access to credit within the urban poor and the role of non-motorised modes within mixed traffic. The second survey interviewed 196 market traders, 145

female and 51 male on their transport needs, the importance of their economic role within the household and the use of family, especially girl child, labour within their enterprises. The third study interviewed 17 extended households and 23 nuclear households. This study, whilst not having direct relevance to the cycling study, reports on the importance of having domestic 'anchors' and household members with low mobility to allow other members to carry out activities further afield using an unreliable transport system.

The cycling study found that ownership of a bicycle, even a second-hand bicycle, represents a large capital item for a low-income household. The use of it or otherwise will be decided as part of a household strategy to survive and its importance within that strategy differs depending upon the cultural attitude attached to cycling. Work has already been presented (Grieco, Turner and Kwakye, 1995) that argues cultural attitudes differ between ethnic communities of Accra. Therefore, where cycling is perceived as being of economic value, then its use will be constrained to those in the household who can show the most likely economic benefit. Where cycling is not seen as being of economic value its practice will be constrained by the community at every opportunity. In either case, given their often weak household bargaining position and their societal role of household reproduction, the use of bicycles by women is likely to be constrained even if they can show an important economic role for its use.

Furthermore, saving towards the purchase of a bicycle can take many months during which the ever-present pressures of other household expenditures must be overcome. This is particularly difficult for women, who often spend most of their income on household expenditure. This paper, therefore, argues that the lack of access to reasonable credit facilities, even for those who can justify such sacrifice by the whole household, imposes a significant cost on bicycle ownership. Improvements in accessing credit facilities for the urban poor, may improve the level of ownership, both in communities where cycling is acknowledged as having a beneficial economic use and in those areas where it is not.

Accra, in common with many developing cities, has a very mixed road use. There is also a general negative attitude in the community as a whole towards cyclists. This leads to a dangerous environment for anyone wishing to cycling, who are putting themselves at considerable risk of death or serious injury. This risk to a fundamental element of any low-income household's survival, its human resources, represents an additional cost for anyone trying to justify economic use of a bicycle. The risk will be perceived differently in different communities but if this remains constant or increases with rising levels of motorisation, existing levels of cycle use will be eroded. The provision of dedicated bicycle infrastructure is often seen as the way to reduce the risk for cyclists. This paper argues that the implementation of dedicated infrastructure for bicycles may require a significant level of enforcement for success, as a result of the negative community attitude towards cycling. The cost of this enforcement should be included in any project budget to ensure that priority for cyclists can be maintained until the flow of bicycles is sufficiently large as to be self-enforcing.

2. COUNTERACTING THE COST BARRIER: A CULTURE OF PURPOSEFUL CYCLE USE.

There is clear evidence in Accra of different levels of cycle ownership and patronage between different low income areas (Grieco, Turner and Kwakye, 1995). It was argued that it is the differences in 'transport cultures' that exist among different ethnic communities which produce these widely varying ridership levels in low-income areas. The research demonstrated that there were highly divergent socialisation practices around cycling in a community composed of Northern Ghanaians or those of Northern extraction (Nima) as compared with those of a community composed primarily of coastal indigenous people (Jamestown). In the North, cycling is a widespread practice amongst adults; in coastal Ghana cycling is relatively rare as an adult activity. Whereas the parents of children in Jamestown frequently beat their children for cycling, the parents of Nima encouraged cycling as an activity. This paper, then, intends to focus on the consequences of such differences in attitude to cycling.

It has been argued that urban poor households have implicit principles that guide family members when seeking the family good in the survival of the household (Moch *et al.*, 1987). These are termed 'household survival strategies'. As these are seen as influences guiding behaviour, it could be useful to assess observed behaviour in this context. It may be fruitful to view the use of all resources available to the household (monetary, physical and human) as being guided by these strategies. It will be argued that assessing attitudes towards cycling in terms of survival behaviour will point to the differential effect of high cycling cost upon different communities within Accra. In those communities that have learned that ownership and use of a bicycle can be economically beneficial, who owns a bicycle and who gets to use a bicycle will depend upon the survival strategy adopted and power relations within the household. In those communities that have not yet learnt the benefit of its use, cycle ownership could be seen as an unnecessary expense and bicycle use may prove very expensive by posing a significant risk of death or disabling injury to the principal resources the household has control over, namely its human resources.

Communities which have already learned the economic utility of cycling are likely to be affected by high costs which will limit the number of bicycles a household can afford to buy and not allow ownership to become widespread with all individuals within household owning a bicycle. Household decisions must be made to restrict ownership to those, within the household, who have greater control over household resources, either by being able to demonstrate possible higher earnings or by having greater power. Communities which have not yet learnt to accept cycle use are unlikely to experiment whilst the cost of ownership puts bicycles out of easy reach. The lack of community knowledge about the economic utility of purchase will mean it is not adopted by households trying to reduce risks in order to survive. Households will, instead, adopt community views on the use of bicycles by its members to the extent of making their use unacceptable.

Table 1 appears to show that the purchase of a bicycle is a major expenditure. For household that are constantly on the edge of dire poverty such expenditure requires significant justification. It therefore appears that households only allow ownership to those who can show that there will be some economic and occupational use for it and that ownership will generate greater income

than would otherwise be the case without it (by carrying greater loads or allowing travel to work and job search over greater distances). This argument is further strengthened by evidence of suggested adaptations to improve load-carrying capability of the respondents bicycles involving strengthening frames and adding additional carrying space.

It must also be remembered that whilst household strategies may guide household behaviour, these strategies may often not be consensual so that those who can command most power and resources within the household may have greater say over what is and is not beneficial economic use.

Qualitative evidence does suggest that use of bicycles within households is determined by the ability of the 'best off' member being able to secure sufficient resources with other household members only gaining access for specific and 'emergency' uses. Many respondents both in Jamestown and Nima indicated that they often lent out their bicycle though often only under the strictest conditions. Close family members were often only able to borrow it and then only in emergencies.

My elder brother uses it, when I am in the house not going anywhere. Conditions given to him is that, to be very careful and repair anything that should get spoilt while using it. No one else uses it.

Male carpenter, bicycle owner, 21, Jamestown.

Some respondents did, however, use the bicycle in a revenue earning capacity, by hiring out the bicycle to anyone in the local neighbourhood willing to pay the hiring fee. This action it appeared was to offset the purchasing and replacement costs of the bicycle and the fact that once purchased a bicycle had some use-value that people would pay for.

'The elder brother bought the first bicycle for him at 12,000.00 cedis but this present Rally was bought from his own personally accumulated savings from the hiring of the first one for one month.'

Unemployed male, 18, Jamestown.

Respondents who did not own a bicycle often reported the pressing financial state of the household; sudden loss of earnings, medical expenditures, as being the biggest constraint on regular saving towards ownership.

Nearly all respondents who owned a bicycle reported that they purchased it through their savings or the resources of some close family member. The use of traditional group saving and rotating credit systems, such as 'susu', was also commonly cited (see Steel and Aryeetey, 1994).

Mallam Adams saved money with Susu collector to buy his bicycle. He plans to purchase next bicycle through "Group Susu" under the Group Susu system, a number of people contribute a stated amount each month or week etc. The money is then given to one member at a time. This continues till the last person gets and the process is repeated. Other people he knows also used the Susu method to finance the purchase of their bicycles.'

Male watch repairer, 45, Nima.

	Jamestown	Nima
No. of owners bought new bicycles	5	11
Average new bicycle purchase price	33,000 cedis	20,700 cedis
Purchase price as percent of GNP per capita (US\$450)	10%	7%
Average time saving for new bicycle.	2.9 years	5.6 years
No. of owners bought second-hand bicycle.	10	9
Average second-hand bicycle price.	17,900 cedis	23,800 cedis
Purchase price as percent of GNP per capita(US\$450)	6%	8%
Average time saving for second-hand bicycle.	9 months	14 months

Table 1: Costs of bicycle ownership in two communities in Accra

Once bicycle use has been justified the purchase of a bicycle remains a major capital expenditure. The average respondent reported saving for between 6 and 9 months before purchase (Table 1) and this was very much dependent upon a stable financial base in the household. During this time the ever-present pressures of other, equally pressing, household expenditures must be overcome. This is particularly difficult for women, who often spend most of their income on household, rather than personal, expenditure. Access to credit was limited and fraught with difficulties such as legal implications if repayments are in arrears; their credit worthiness in the eyes of formal institutions as a result of low social status and the high interest rates often payable to moneylenders. Steel and Aryeetey (1994) claim that interest rates can be as high as 100% over 9-12 months.

Q: If given the choice between saving and obtaining credit, which would you prefer?

A: Credit, since it is difficult to save in our type of economy and considering the size of my family and dependant.

Male security guard, 42, Nima.

It would appear reasonable to suggest that given the problems of isolating savings towards bicycle purchase, where dedication of household resources to the purchase of cycle have to be justified or where resources of others, such as close relatives, have to be captured, making sure that the bicycle is used only for a purposeful economic activity is important in order to justify meeting these high costs associated with bicycle purchase.

I use it for farming and carrying feed for the animals.

Male petty trader, bicycle owner, 38, Jamestown.

To visit my charcoal customers and other places of interest.

Male charcoal seller, bicycle owner, 22, Nima

The responses of women non-owners, who whilst being able to ride and claiming to do so occasionally, only provided reasons such as leisure, enjoyment and exercise, for riding. These one could assume were not sufficiently pressing reasons to warrant large capital outlay in an income-scarce environment. Few if any of the respondents who did own bicycles cited such reasons as justification for purchase. It is also interesting to note the occupation of a large number of the male bicycle owners. They appear often to have occupations that require the carrying of goods during the working day or the need to travel to their workplace outside of the most convenient time for the use of public transport. For example, male owners were tradesmen, farmers or night watchmen.

The lack of access to formal credit facilities results in people diverting sums from their meagre income to informal savings collectors such as the *susu*, with the risk of losing the accumulated capital and devastating effect that could have on household survival.

'No because I am fairly old and need not involve myself in the social activities of the youth. I always keep my monies in the room that I stay in with some relations. I have no trust for susmen because they have twice absconded with my savings.'

Ewe kayayoo, 45, working at the Timber Market

Evidence collected on the role of cycle hirers, shows that whilst hirers were typically slack in the servicing of their vehicles, they were not so slack on ensuring the trustworthiness of their customers. Respondents and the hirers themselves reported a range of devices that the hirers used to ensure the security of their bicycles. These included potential hirers needing personal guarantees from people who the hirers had dealt with before and could be held responsible if anything failed; limiting hiring to a very small area within sight of the hirer themselves and also gearing charges in favour of hiring for very short time periods to limit the opportunity for theft. Such stringent conditions on hiring, a result of the difficulty hirers would have in affording to replace stolen or damaged bicycles, can limit purposeful use of a hired bicycle. This is especially where charging structures limit hiring for economic and occupational use. The limiting effect on demand, of hirers needing to safeguard property because of low financial status, was also found in studies of access to wheeled technology for market porters (Apt, Grieco, Donkor-Badu and Turner., 1994).

3. PLAYING WITH THE TRAFFIC! - EFFECT OF COMMUNITY ATTITUDES ON RESPONSES TO ROAD SAFETY

It is useful to assess the impact of the continuing perception by most urban dwellers that cycling is a dangerous activity. The cultural values and attitudes of the urban communities within Accra influence what reaction is developed over time to the continuing level of cycle accidents. These same community values and attitudes are explored to assess what effect possible policies and measures may have in altering the level of cycling safety.

For households living in constant threat of dire poverty, access to resources (financial, physical and human) and the well-being of those resources are of significant importance. A parallel study on the travel behaviour of the urban poor in Accra provides evidence of the important role children, especially girl children, play in acting as a labour resources for the household from a very early age (Grieco, Apt and Turner 1994 and Joekes, 1994). It would, therefore, not be unreasonable that within communities that do not recognise the economic benefit of riding a bicycle, attempting to learn to ride as a child would not be seen as acquiring life-skills but merely putting important household resources at an unacceptable risk, for no economic benefit, in the dangerous traffic environment.

By contrast, in those communities where riding bicycles is seen as having a clear economic benefit, then learning to ride as a child becomes a useful life skill. One result of accidents with other road users in this context would be not to necessarily deter the community from sanctioning children learning to ride but rather adapt behaviour to reduce the risk, such as only sanctioning those who will go on as adults to justify cycling for economic purposes. Women in neither community were perceived as having a need to use bicycles for economic purposes and so learning to ride by girl children was particularly discouraged.

Equally, parental opposition to cycling feeds a 'dare-devil', unsafe cycling culture where accidents are more likely. As argued by Grieco, Turner and Kwakye (1994), in Jamestown there is much parental opposition to children riding bicycles, as it is seen as deviant teenage behaviour and extremely dangerous. There were many respondents, both in Jamestown and Nima, who told of aggressive driving behaviour and pedestrian movements which led either directly to accidents or at least near-misses. This often seemed attributable to the negative attitude that cycling formed within the urban community as a whole.

Northerners, who dwell predominately in communities within Accra such as Nima, come from areas where cycle/other traffic interaction was more cycle friendly and safe. By contrast, indigenous ethnic groups of Accra used to living in areas where cycle/ other traffic interaction is dangerous. The Northern communities, it would appear, are more likely to ignore the risks i.e. evidence of accident frequency is roughly the same but 'lessons learnt' are different. This is also illustrated further by the work of Salifu (1993) who, studying the cycle accident statistics of Tamale, Northern Ghana, points out that the increase in motorisation in this once bicycle dominant area of the Northern Region is having a significant effect on the level of cycle accidents. With time, this cycle-friendly area too may experience a change in attitude by the community against cycling, with its resulting, detrimental financial, environmental and safety effects upon the urban poor, unless steps are taken to protect the existing cycle population.

Improving the safety of cycling is seen as a fundamental step to increasing the demand for cycle use amongst the urban population. Central to this approach is the segregation of non-motorised modes from motorised modes. However, how to enforce a right of way for bicycles, once constructed, within an environment of mixed road use, common throughout the developing world needs consideration. The problem of who has priority within a mixed road use environment is of significance when determining how to promote non-motorised modes. It is useful to consider the context and culture of the cycle/other transport interaction in Accra.

Q: What journeys around Accra can you not use your bikes for and why?

A: Very long journeys and on busy streets because of dense vehicles and human traffic.

Male construction worker, bicycle owner, 24, Nima.

I don't take it to Circle area because of the nature of the traffic and the way the taxi drivers drive around

Male Pretty Trader, 38, Jamestown

Human transport and roadside vendors are not only an ever-present feature of Ghanaian urban culture, they fulfill a very significant economic role. However, evidence from interviews in Grieco, Turner and Kwakye (1995) point to a level of disrespect for cyclists from other road users extending across the transport hierarchy from human transport and roadside vendors to motorised transport operators. Many respondents recounted incidents where pedestrians deliberately stepped out in front of the cyclist or where the cyclist was verbally or physically abused for travelling in crowded pedestrian areas or for colliding with street vendors. These experiences were equalled by the abuse from motor vehicle road users, especially it appears from taxi drivers. Equally, parallel studies conducted in Accra of market porters point to the high level of non-motorised modes/human interaction (Agarwal et al., 1994 and Apt et al., 1994). Attitudes of some junior officials were also found not to be favourable towards non-motorised modes as respondents reported occurrences where bicycles or trolleys were confiscated by these officials for being in places of high human or vehicular traffic. Overall, the transport culture of Accra is not favourable to cyclists.

Clearly there are cultural aspects which are involved in rendering cycling safe. In China and much of South East Asia, there is mass cycling behaviour and safe roadspace for cyclists is determined by sheer weight of numbers (Jin Ghuo, 1994). In the Netherlands and Germany cycling is a respected means of behaviour and officially provided for within the transport system (Tolley, 1990). Official, positive measures for the provision of bicycle infrastructure and its efficient enforcement may affect some change in the Accra transport culture towards cyclists. This may occur as people perceive that, as a result of these official actions, there is no longer an official sanction for their own negative attitudes to cycling and cyclists.

However, given existing community values and attitudes and the mixed road use characteristics within Accra simply providing infrastructure for cycling does not guarantee that it will be used for this purpose. Respondents painted a picture of constant interaction of pedestrians with cyclists, motor vehicles with pedestrian street-sellers and fixed vendors and people living on the street interacting with them all. Cultural and official attitudes, however, currently favour vendors' rights against cyclist rights where there is a collision over use of road space. There is significant potential, therefore, for invasion of dedicated cycle infrastructure by vendors and other non-motorised road users. Evidence from our studies in the Jamestown area of Accra suggests the danger of cyclist-pedestrian interaction as perhaps the most important concern when respondents consider the safety of themselves or their children riding in the area. In such situations motor vehicles have a natural advantage at being able to enforce their share of road-space; bicycles do not.

Since it is common enough throughout the developing world for facilities for all road users to be limited and of poor quality (Gardner *et al.*, 1989), any attempt to provide quality facilities for one user (e.g. cyclists) will lead to the other users also using this space, when they can get away

with it¹. If there is, as yet, not enough cycle demand in Accra for the bicycle to be able to maintain a right-of-way in competition with other human activity by sheer weight of numbers, how are cycle lanes going to be prevented from becoming yet more space for street-sellers and pedestrians? It is argued that if cycling were safer then there would be more bicycles to use the dedicated infrastructure, but if constant interaction with other road users is seen as a safety problem, then, clearly, there is a need for some form of enforcement of any newly-constructed cycle lanes if their right-of way is to be maintained so that they can contribute to the improvement in the status of the bicycle.

These policy directions need to be considered and budgeted for if cycle infrastructure is to be kept for cyclists right-of-way until such time as cycling in Accra becomes popular enough as to make priority self-enforcing. Extra enforcement needs to be introduced and paid for. Large-scale and conspicuous signing clearly stating bicycle priority may need to be put in place, even to the extent of maybe using coloured asphalt for the cycle lanes. In the most congested locations where all forms of human transport are competing for limited access, only the construction of alternative provision for pedestrians and street vendors will begin to ensure cyclists are able to have priority.

4. BUYING A BICYCLE OR OPENING A BUSINESS? THE OPPORTUNITY COST OF CYCLE OWNERSHIP FOR WOMEN IN URBAN ACCRA.

Whereas a Nima female cycle hirer used her bicycle as the basis of her petty trading business, and a female child in Jamestown indicated that if the opportunity presented itself to purchase a bike she would and hire it out for money, most of the economically active women surveyed saw the purchase of a bicycle as something which detracted from their ability to invest in a business. The parallel studies conducted in Accra have identified significant pressures on women to conduct economic activities. One study estimated that about 60% of households were dependent on the income the women generated (Grieco, Apt and Turner, 1994).

Grieco, Turner and Kwakye (1995) identified cultural barriers against women cycling for leisure. This is further reinforced by evidence from other studies conducted in Accra, by TRL, that there appears little cultural acceptance of female children's need to play, rather that it is seen that they should assist adult females in household reproductive tasks from a very early age (Grieco, Apt and Turner, 1994).

Q: How about your children, since you have a large family?

A: They are all females, so they can't use the bicycle.

Male security guard, owner, 42, Nima.

¹Local experts also cite cases in Nima where new pedestrian accesses have been built, but due to their good drainage and high-quality surfacing these pavements have been used not only as a pedestrian way but as cycle way, motor vehicle access and selling area as well. Aid agencies may reconsider decisions to lend money for further pedestrian pavement construction if they view such behaviour as a failure of the policy to construct dedicated pedestrian rights-of-way, easing pedestrian movement and improving safety.

There are religious barriers to females riding in Nima. According to one respondent, on one occasion when the Imam saw a female riding bicycle, he preached against the practice in the mosque. Further, neighbours make rather uncomplimentary remarks about females who ride.

Female non-owner, Nima.

Due to the costs involved in ownership, cycling has to be for an economic or purposeful activity to be justifiable. As so few women appear to use bicycles as adults for economic and occupational purposes, there is pressure on them not even to acquire riding skills in childhood. The fact that bicycles cannot obviously be seen as a means to greater income-earning for women is perhaps a result of the inability of current vehicle design to reflect the need for greater carrying capacity, for economic use to be viable. Many respondents, both male and female cited preference for existing designs that has greater load-carrying capacity and offered suggestions of how future bicycle designs could be adapted to improve their carrying ability. Given the weak position of women when bargaining for access to capital within households, except what can be saved through their own saving or with the help of collective schemes with other women such as 'susu', there is a need for schemes that can allow them to purchase bicycles of current design or improved form. Perhaps bicycle loans could be made as part of business plans to women petty traders.

Gender barriers to cycling in all communities mean that if mass non motorised transport is promoted and women continue to have highly limited access to bicycles, women will be pushed back even further on to their own two feet and so the promotion of cycling should be designed so as to alleviate and not intensify this.

5. CYCLE PATHS, SUPPRESSED DEMAND AND SUBSTANTIAL VARIATIONS IN LOW INCOME ATTITUDES TOWARDS CYCLING: THE IMPERATIVE FOR CULTURAL SENSITIVITY.

Ownership of a bicycle does represent a significant investment for an urban poor household. Reduction of the purchase price of bicycles may make it easier for household members to justify ownership. Many of the respondents surveyed, however, owned second-hand bicycles imported from Western Europe so it is unclear what effect reductions in the purchase price of new bicycles will have on this sector of the market.

However, there is a need not simply to accommodate a suppressed demand, by reducing bicycle costs, as this will merely replicate the division within cycle use at present. It has already been identified that there are significant variations between communities within Accra towards bicycle ownership and these will not be overcome simply through purchase price reductions. It must be recognised that within those communities that accept cycle use the cost to the households of earmarking valuable resources for bicycle ownership should be made easier. The lack of access to credit for the urban poor hinders efficient organisation in transport provision as in many other areas of economic life. However, demand must also be induced within other communities and sections of the population. Explicit consideration must be given on how to render the bicycle more economically and occupationally useful, in order that people can justify the large call on resources within a household to purchase a bicycle. In part then, there is a need to promote cycle use within communities with limited acquaintance with the bicycle, in part to promote its use by

promote its use by women.

It must be remembered that household members themselves are major economic resources within an urban poor household and as motorisation increases, even in those communities that accept cycle use, it will become increasingly difficult to justify the risk cycling places on such human capital. Therefore some form of segregated infrastructure is required to preserve the existing levels of cycle use and allow the promotion of its use in other communities. However, the special features of mixed road use in West Africa and the overall negative attitudes towards cycling require consideration in the designing of facilities. The potential for vendor and pedestrian invasion of cycle facilities and thus the costs of enforcement and role of signing require explicit consideration in any scheme. The evidence reported here suggests that it will not simply be sufficient to build cyclepaths or even to persuade a substantial section of the public to use cycles on the main economic arteries of the city but that other road users need to be educated on their behaviour toward cyclists.

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