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## Moving on two wheels: A comprehensive study on bicycle behaviour among Ghanaian children.

Regina O. Amoako-Sakyi<sup>1</sup>, Samuel A. Owusu<sup>2</sup>

<sup>1</sup> Department of Geography and Regional Planning, University of Cape Coast, Ghana.

Email: [rodeii@yahoo.com](mailto:rodeii@yahoo.com) <sup>2</sup> Directorate of Organisational Development and Consultancy, University of Cape Coast, Ghana Email: [kowuuus@yahoo.com](mailto:kowuuus@yahoo.com)

### Abstract

*Background:* Children in most Sub-Saharan African countries are faced with severe mobility constraints in their quest to access schools, health care and other places important to their well-being. Although bicycles apparently offer possible solutions to these problems as a relatively low-cost, Non-Motorised Transport (NMT), the potential of bicycles to address some of the transport needs is largely unexplored in most parts of Africa with South Africa being a notable exception. . The study investigated the effects that the attitudes of parents, teachers, and peers may have on this.

*Methods:* The study was conducted by fieldworkers in eight communities within two ecological zones (forest and coastal) in Ghana. Both qualitative and quantitative data collection were employed within the context of a cross-sectional study design. Questionnaires, focus group discussions and in-depth interviews were conducted in all the study communities. A total of 1005 questionnaires were administered and approximately 400 qualitative interviews conducted.

*Results:* The study revealed that 30% of households across both ecological zones owned bicycles. However a much higher proportion of children - 68.6% - used bicycles ranging from everyday use to once per week. . Bicycle use was mainly for recreation and running errands. Gender was important in shaping bicycle use among children: while 84.1 per cent of boys used bicycles, only 55.2 % of girls did.

*Conclusions:* Children's use of bicycles is higher than levels of household ownership might suggest. Over two-thirds of children surveyed used bicycles, mainly for recreation and running errands. Attitudes of motorised vehicle drivers, parents, teachers, and peers influence bicycle usage among children with parents' attitude mainly influenced by dangers within the physical environment.

*Key words:* Children, bicycles use, ownership, behaviour, Ghana.

## *Introduction*

Bicycles are a commonly-used form of transport globally. In Western societies, bicycles are still used to address some transport needs; the bicycle remains a principal means of transport to work and for shopping in some countries (Simon, 1996). In the Netherlands for instance, bicycles make up about 27% of all trips, 18% for Germany, Finland and Sweden and 18 % for Denmark (Pucher and Buehler, 2007). In the United State of America, cycling accounts for 1% of all trips and is mostly for recreational purposes and not necessarily transportation (Xing et al, 2010). Bicycle use among children is relatively higher than the national aggregates. An estimated 35% of Dutch (the Netherlands) children use bicycles whilst 20% and 18% of Danish and German respectively use bicycles (Pucher and Buehler, 2007). In the USA, more than 70 % of children between the ages of 5 and 14 use bicycles (NSKC, 2004). Like most non-motorised transport (NMT) equipment, cycling has several advantages over motorised transport (MT) in terms of cost, environmental friendliness and physical activity of users. Thus, calls to develop NMT as an appropriate and sustainable strategy for developing countries has often focused on cycling and walking (Kipke, 1988; Replogle, 1988).

Various studies have shown that investing in low-cost NMT in developing countries could enhance access to economic opportunities and social amenities in both rural and urban settings (Heyen-Pherson, 2005). However, apart from some Asian countries, bicycles are very under-used in many developing countries, particularly in Sub Saharan Africa. Whereas ownership of bicycles in China is well over 50%, a World Bank estimate suggests that only about 3.5% of sub Saharan Africans own bicycles (Grieco *et al.*, 1994; World Bank, Sub-Saharan African Transport Program, 1990). Literature on bicycle use in Africa is sketchy, and the few existing studies suggest substantial intra- and inter-country variation in bicycle usage (Howe and Barwell, 1987; Howe and Dennis, 1993). Data from Ghana suggest that bicycle usage is predominantly confined to the three northern regions. The Millennium Cities Initiative (MCI) and Vale Columbia Centre (VCC) reports that the social acceptance of bicycle use appears to be spreading to the southern parts as well (VCC and MCI, 2008). Figures from the 1980s show that out of the national stock of 200,000 bicycles, 34.2% were in the Northern Region, 43.8% in the Upper East and West Regions and 0.7% in the Greater Accra Region (Howe and Dennis, 1993). Several distinct factors may influence different bicycle cultures in different societies (Lorenc *et al.*, 2007). Besides South Africa, factors influencing bicycle cultures are yet to be comprehensively studied in most sub Saharan countries including Ghana.

In Africa, many children face severe mobility constraints in accessing education, health and recreation (Porter 2010; Porter et al, 2010a; 2010b; 2011). Children in some Ghanaian communities walk long distances to school, with important implications for school going age, absenteeism and early drop-out (Porter et al, 2010a). To what extent can bicycles help to address this important transport gap? In South Africa 23% of school children, the majority of whom attend rural and farm schools, walk more than 6 kilometres on a single trip to and from school. The Shova Kalula bicycle project was introduced in 2001 by the Department of Transport and aimed at distributing 1 million bicycles by 2010 to improve rural accessibility to education resource centres (Department of Transport, 2007). As part of the Shova Kalula Project, over a thousand bicycles were distributed in October 2008 to children living in Inkangala who had to walk great distances to school (Makapela, 2008).

A qualitative study conducted in Ghana over 15 years ago suggested that bicycle usage among children in two urban slum communities was influenced by different socialization patterns (Grieco *et al.*, 1994). However, few systematic quantitative studies to describe bicycle behaviour and also test the association of various socio-demographic variables and bicycle have been undertaken. Future interventions by governments and/or Non-governmental organisations will greatly benefit from an in-depth understanding of bicycle use within unique social and cultural contexts.

### *Methods*

#### *Study population and sample size*

This paper draws on data from a large research project on child mobility designed and led by the University of Durham, in collaboration with the universities of Cape Coast, Ghana, Malawi and CSIR, South Africa [see [www.dur.ac.uk/child.mobility/](http://www.dur.ac.uk/child.mobility/)]: Details of study design, data collection and data analysis (where this relates to Ghana) are provided elsewhere (Porter, 2010 ; Porter et al 2010a, b, c, d; Porter et al, 2011 in press; Robson et al, 2009).

Briefly, the study in Ghana involved 1005 children aged between the ages of 8 and 18 drawn from eight communities within two ecological zones. The children were either classified as in-school or out- -of-school. The eight communities used were representative of urban, peri-urban rural and remote-rural communities. Some of the study settlements were nucleated, some partly nucleated, some partly or fully dispersed and some linear.

### *Study design*

Both qualitative and quantitative data collection was employed within the context of the mixed-method study design. Questionnaires, focus group discussions and in-depth interviews were conducted in all the study communities. A total of 1005 questionnaires were administered while 323 in-depth interviews (IDIs) and 31 focus group discussions (FGDs) were held to supplement the quantitative data collected. The IDIs conducted included interviews with 12 key informants (mainly settlement leaders, teachers, drivers and health personnel.), 12 out-of-school children, 12 in-school children, 12 parents and 6 life histories of study participants in each of the 8 study sites. FGDs with in-school and out-of-school study participants were held separately with each group and consisted of up to 10 children. Individuals and households formed the unit of analysis for statistical analysis as appropriate. The quantitative data were analysed using SPSS.

### *Results*

#### *General characteristics of study participants*

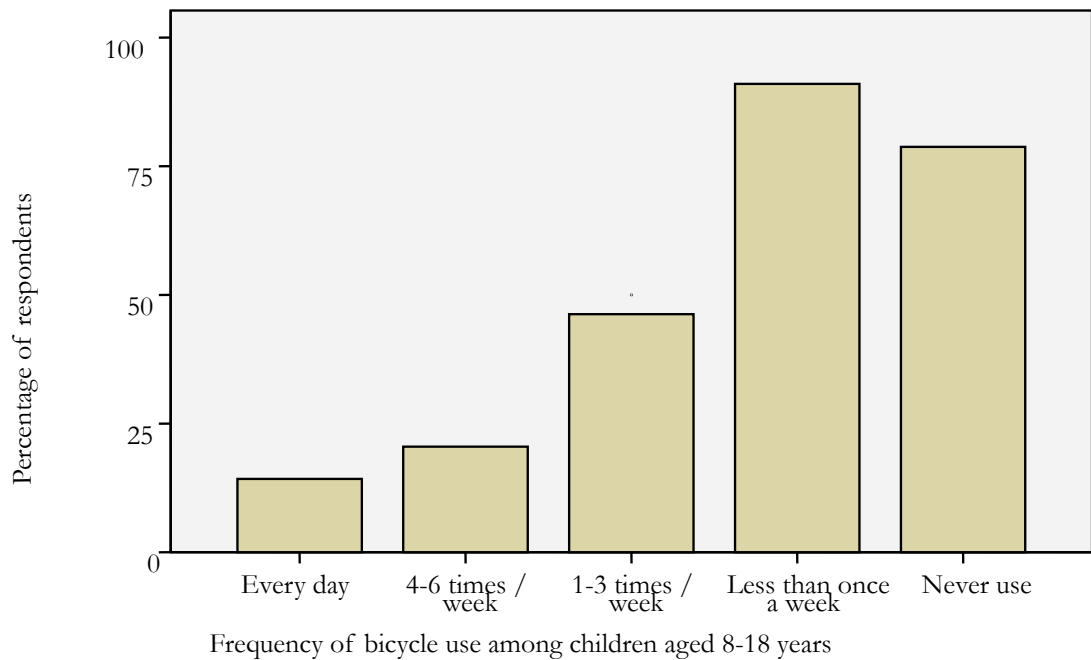
A total of 1005 children participated in the quantitative survey. This number may vary for different elements of the analysis due to missing values. Of these 1005, 528 (52.8%) were females whilst 472 (47.2%) were males. Participants for the quantitative study were all children and young people<sup>1</sup> aged between 8 and 18 years with a median age of 13 years. 870 of the study participants (87.1%) were enrolled in schools whilst 129 (12.8%) were out of school. Study participants were drawn from the coastal and forest ecological zones of Ghana. Distribution of the survey population across the four settlement types was as follows: urban (25.2% of total survey population), peri-urban (29.2%), rural with services (25.5) and remote-rural (20.1)

#### *Bicycle use*

Results from this study showed that 31.5% of the children had never used a bicycle. Of the 68.5% who do ride bicycles, more than half (52.8%) use them less than once a week, while only 8.3% rode bicycles on a daily basis. Frequency of bicycle use among study participants is shown in Fig 1.

Although household ownership of bicycles was generally low(29.8%), the survey data suggest that individual usage among children was considerably higher and in some cases more than 5 times higher (see table 1) than the

<sup>1</sup> The terms 'children' and 'young people' are used interchangeably to refer to study participants.



**Figure 1: Bicycle use among children**

ownership rate, due to loans of cycles from friends or through hiring [locally referred to as kobo-kobo. This is illustrated in some responses from a focus group discussion among the children.

I have no bicycle on my own but I know how to ride a bicycle. I learnt how to ride through hiring bicycles anytime I had money. My grandparents encouraged me to learn how to ride a bicycle. At times they give me money to go and hire a bicycle. They (grandparent) wanted me to know how to ride a bicycle so that they could occasionally ask me to run some errands for them. The furthest distance I ever travelled by a bicycle was about 4km to [nearby] town. I went there to deliver a message on behalf of my grandparents.

[8-year-old in-school boy, coastal peri-urban]

### *Bicycle ownership*

Data from this study revealed bicycle ownership of 29.8% among study participants. However, 21.9% of bicycle owners had non-functional bicycles. Only 16.4% of female headed households owned bicycles while among their male counterparts there was a 36.0 % ownership rate. Rates of bicycle ownership among the two ecological zones are shown in figure 2.

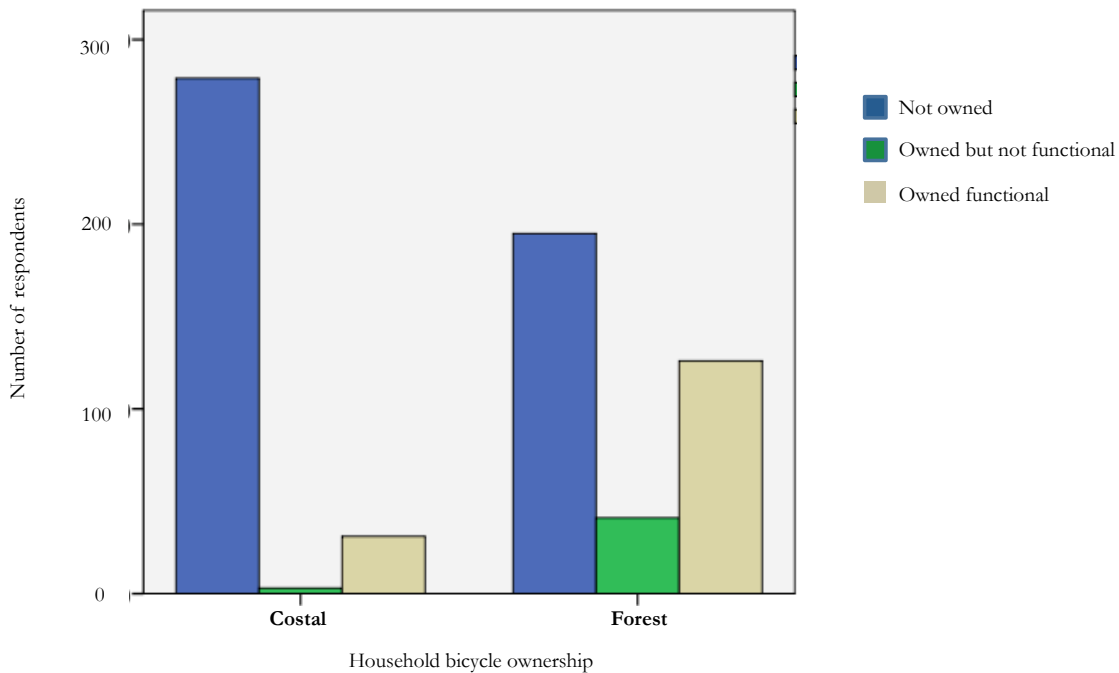


Figure 2: Household bicycle ownership in the two ecological zones

#### *Determinants of bicycle usage and ownership*

Chi square tests were used to analyse the relationship among bicycle ownership/usage settlement type, age and sex. The results are summarised in Table 1.

#### *Bicycle use and gender*

Bicycle use among males and females is shown in table 1. Our data showed that bicycle usage is significantly associated with gender i.e. bicycle use was much higher among boys than girls ( $p < 0.0005$ ).

Qualitative analysis of our results suggests that several factors may explain the significantly higher usage of bicycles among boys. The first is parents' attitudes towards their girl-children riding bicycles. The following is a quotation from a 41 year old father of two who also fosters 3 nephews and a niece:

My three nephews know how to ride a bicycle. They learnt it through hiring of bicycles from this community. My niece also can ride a bicycle. She also learnt it through hiring of bicycles in the community..... I am more worried about girls who ride bicycles than boys because they are not always as courageous as boys and therefore there is the tendency for girls to be involved in accidents when riding bicycles.  
[urban forest zone]

**Table 1: Determinants of bicycle ownership and usage by children aged 8- 18 years**

	<b>Bicycle ownership</b> (bicycle owned within the household)	<b>Bicycle use</b> (whether the child ever uses a bicycle)
<b>Sex</b>		
Male	29.7 %*	84.1 %***
Female	29.6 %*	52.2 %***
<b>Settlement type</b>		
Urban	13.7% ***	70.0% **
Peri-urban	33.8% ***	74.7%**
Rural with Services	38.3% ***	63.5%**
Remote rural	34.4% ***	64.4%**
<b>Age group</b>		
8-11	30.5%	53.5 % ***
12-15	29.8%	70.6%***
16-18	36.5%	80.8%***

*P(Chi<sup>2</sup>) values: \* <0.05, \*\*<0.01; \*\*\*<0.005*

Similarly, the children also gave responses to suggest that their riding behaviour is influenced by the attitudes and perceptions of their parents.

I ride it around this area and to places where there are no busy roads. I learnt to ride at school from my friends. I got hurt once when I was learning and my father asked me not to ride it again because bicycle riding is for boys and not girls. I still learnt it anyway. I don't own one personally; I hire one when I want to ride.  
[18-year-old out-of-school girl coastal urban]

My parents always warned me against riding a bicycle because according to them a female is not supposed to ride a bicycle. As a female, I prefer the type of bicycle without a crossbar because it is easy to get on the seat or come down from the seat.  
[17-year-old in-school girl coastal urban]

The perceived physical vulnerability of girls, particularly in relation to reproductive health, often underpinned disapproval of girls riding bicycles.

I think bicycles are good means of transport for boys because it keeps them busy and also make them available in the community at anytime. Bicycles are not good means of transport for girls because according to one of my friends if a girl rides a bicycle very often she may not be able to give birth in future and I believe her story.

[17-year-old girl, coastal urban]

It is not good for girls to learn how to ride bicycles because girls are delicate and when they ride it they can become all muscular like the boys or they might fall down and hurt themselves. With the boys it is good for them to learn how to ride since they are hardier. Also they can use it to run errands.

[16 year old out of school girl, coastal rural]

Societal definition of roles for boys and girls also played a vital role in relegating girls to the background when bicycle usage is involved. The perception that boys should be outgoing, with girls tagged as home-makers with limited strength and resources, is suggested by a respondent as the reason why it is not too important for girls to learn to ride bicycles:

It is good for boys to know how to ride it helps to shorten distances. If he knows how to ride he can send it to the school, farm and everywhere. For the girls it is also good but it is not a must that they know to ride, because if let say the maize mill here breaks down she can ride the bicycle and send her maize to the next village for grinding if her husband has one otherwise she has to walk. It is important for girls to learn to ride but for boys it is a must because as for the females even if they learn to ride, they will not get the money to buy a bicycle, even if they have the money they will not buy it since they usually do not like riding it as the males do and even if they ride they just ride it around they do not send it on long distances. They do not have the strength to ride long distances. Even if they have the strength, theirs is not like the men they therefore cannot have the strength to ride to places like [town 20km away]

[18-year-old out-of-school boy, forest rural]

### *Age and bicycle use*

As noted earlier, this study involved children aged between 8 and 18 years with a median age 13.5 years. Study participants were categorized into three age categories (see table 1). Bicycle usage was significantly different among the various age categories ( $p < 0.0005$ ) with older children using bicycles more often than younger children. However, as might be expected, age of children is not

associated with ownership of bicycles within households ( $p < 0.155$ ) since about 90 per cent of cycles are owned by adults within the household, and not children. However in almost all households with functional bicycles, they were available for use by the children.

#### *Settlement type, bicycle ownership and usage*

The study investigated the association between settlement type (i.e. urban, peri-urban, rural with services and remote rural) and bicycle usage. A significant association was found between settlement type and bicycle usage ( $p = 0.018$ ). The highest and least bicycle usage was found among peri-urban and rural with services respectively: Table 1.

The overall bicycle ownership among the study population was 29.8%. Ownership among urban, peri urban, rural with services and remote rural settlements was found to be 13.7%, 33.8%, 38.3% and 34.4% respectively. However, figures of bicycle usage in the various settlements did not concur with ownership. For instance, regardless of the low ownership of bicycles in urban settlements (13.7%), usage was relatively high (70.0%) (Table 1). The data also showed that families that owned cars were more likely to own bicycles ( $p < 0.048$ , data not shown)

#### *Use of bicycles for different purposes and individuals' motivations*

Choice of mode of transport varied among study participants depending on the activity/transport needs of the respondent. For instance the study revealed that the main mode of transport used by children in the study area to access education is walking (98 %) while walking accounts for only 32 % in accessing healthcare, coming second after the use of taxi cabs (56.2 %). Only 1% of the respondents used bicycle to access school whilst none of the respondents used a bicycle as the main means of transport to assess health care. Bicycles were however indirectly used to assess healthcare since they are sometimes used in emergency situations to commute to the nearest taxi terminal to hire a taxi.

Bicycles are a very good means of transport [for boys] to use. For example in cases of emergency in the absence of cars the bicycle can be used to go and get help. Last year one of my cousins got sick and needed to be rushed to the hospital if it had not been for the fact that there was a bicycle at home and someone who knew how to ride something bad could have happened. Because of the bike when it happened one of my relatives rushed and rode the bike to the station and got a car that came to pick the sick person

to the hospital I believe if he was to walk to the station he would have taken a longer time to reach and the person could have died.  
[17-year-old out-of-school girl, coastal peri-urban]

The study revealed that 98 % of all bicycle usage is for running errands over distances ranging between some few metres to 8km and for recreational purposes.

In terms of motivations, 30.6 % of child bicycle-users said that they like riding bicycles because it aids them in getting to places faster than walking. This was closely followed by 21.1 % who simply said they were thrilled by the speed of bicycles and so they took to riding it. 14.1 % said they simply enjoyed riding it whilst 11.2% indicated that they rode bicycles because it helped exercise their bodies. Other reasons children gave for choosing to ride bicycles included: it being a cheap form of transport (1.5%) and being useful for carrying loads and shopping generally (5.1%).

If I knew how to ride I could have used it for errands and it would have made my journey easier. I could have even ridden it to my hometown which is just here and it would have helped me in saving money.  
[14-year-old out-of school girl, coastal urban]

Bikes are good means of transport for both boys and girls. It can enable a child to move faster to other places to deliver important messages. It is also convenient to use bicycles to all kinds of places.  
[15-year-old in-school girl, coastal, peri-urban]

Usually if my mother want to send me and it was urgent, she could borrow one for me..... My mother borrows from my sister's husband who owns one.  
[16-year-old out-of-school girl, forest urban]

I learnt to ride because I could use it if I am sent [on an errand]. My brother taught me by pushing me on a hill down slope.  
[13-year-old in-school girl, forest rural with services]

As noted above, among school-going child respondents, fewer than 1% used bicycles to travel to school. Some school authorities, notably in the urban centres, had placed a total ban on the use of bicycles to school for fear of their

premises being used as hiring centres for these bicycles as these teachers indicate:

None of the students come to school on bicycles. We won't even allow that. If we do allow students to bring bicycles to school we will be soon faced with the problem of these students hiring out the bicycles to their colleagues on campus and instead of staying in the classrooms to learn, the students will prefer riding the bicycles. We will definitely not allow it.

[24-year-old male teacher in a coastal urban school]

Bicycle riding is not allowed on campus and children strictly adhere to this law.

[26-year-old male teacher from coastal urban school]

However, some other schools, while restricting the use of bicycles on campus, allow for children to travel to school by bicycle.

When they come to school on bicycle, we have a designate place where they are supposed to park their bicycle and are not allowed to ride their bicycle around on campus.

[35-year-old male SHS teacher Forest urban school.]

A few teachers had a more liberal attitude towards bicycle riding and encouraged the use of bicycles especially by students who had to travel long distances to get to school, with some noting that it is the least intervention that can be done in assisting children in accessing education, even if there may be some drawbacks of cycling for children:

...But generally provision of bicycles to those who travel from outside the settlement will improve their schooling tremendously. There is one girl who rides a bicycle from one of the surrounding villages so I think provision of bicycles will benefit both males and females equally.

[30-year-old male teacher, coastal peri-urban]

The students who use the bicycles complain of tiredness. They pass through the rains and the sun as well and there are all inconveniences. The dust especially between the community and the junction is also an enemy to them. A teacher who uses a bicycle for his distance education in UCC once boarded a vehicle with the bicycle because he was tired. So if an adult is tired, then the

students will not have it easy. The children are not late to school. They set off early on their bicycles so they get to school early. But you always see them sweating and tired. They sweat at times make the books even wet.

[49-year-old male Headmaster, coastal peri-urban]

### *Attitude of drivers*

The general attitude of drivers towards bicycle riding among children is negative, since they perceive child cyclists as dangerous road-users, though most agree that cycling should be encouraged among children (and most allowed their own children to cycle). This attitude has been informed largely by their experiences of child riders with whom they unwillingly share the same road network because of the general absence of bicycle lanes in all the study areas. To the majority of drivers, the children were a nuisance to their work and had no legitimate right to be sharing the road space with them:

...the cyclist also disturb us on the way. They do not check whether there is a vehicle approaching and by the time you (the driver) realise they are right in front of you. Just last week a young boy held iced water in one hand and rode a bicycle at the same time. He quickly dashed across the road without checking if there was a vehicle close by. Fortunately I had already spotted him and was able to stop just in time to avoid hitting him. I just moved on quietly away without commenting on the incident even though on lookers at the scene started to chastise the boy.

[25-year-old driver, forest peri-urban]

In Ghana, as in many other countries (such as the USA, Kenya among others), there seems to be a high perception of danger associated with cycling on the road. Rissel et al. (2002) contend that, due to safety concerns, many potential cyclists do not cycle on the road. Others also attribute this to the lack of safety accessories such as reflectors and lights to warn other road users especially motorised drivers of their presence on the road.

I do not like children cycling and this is because some of these children ride in the night and their bicycles do not have any light. If you are not careful you can kill someone. The other time, I nearly knocked one of them down.

[33-year-old taxi driver, coastal urban]

Cycling on the road is in fact dangerous no matter the age of the user. In Ghana, bicycles accounted for 5% road traffic fatalities in urban environment between 2001 and 2005 and 4% in non-urban environment (Afukaar, 2007). In the USA, The National Safe Kids Campaign (NSKC, 2004) reports that the 5-14 year group accounts for approximately 21 % of all bicycle related deaths and nearly half of all bicycle related injury whilst in the Netherlands in the cycling age group of 10-14 face the greatest safety risk because of children often start participating in traffic as solo cyclist at that age (SWOV, 2009).

### *Discussion*

Data on bicycle ownership in Ghana is sketchy. The Institute for Transport and Development Policy's (ITDP) provided an estimate of bicycle ownership in Ghana as 2.9% about half a decade ago (Gauthier and Hook, 2005). However, this estimate actually represents bicycle sales, a variable that may not exactly compare with bicycle ownership. This current study revealed an overall bicycle ownership of 29.8% among study participants' households. However, 21.9% of bicycle owning households owned non-functional bicycles. Taken together, an increase in bicycle ownership over the decade is not inconceivable considering that bicycle ownership is positively correlated with Gross Domestic Growth (GDP) - Per Capita Income (Gauthier and Hook, 2005). Ghana's GDP-per capita has increased from less than \$500 in 2005 to \$1,500 in 2009 (CIA, 2011; UN, 2011). However, GDP-per capita alone may not be enough in explaining the increase in bicycle ownership. In spite of its relatively low GDP-per capita, bicycle sales in Ghana in 2009 were 29 per thousand people, which was higher than bicycle consumption in China that same year (Gauthier and Hook, 2005). Other factors such as promotion of a cycling culture by NGOs and reduction in bicycle import tariffs may have contributed to the observed increase. For instance, a reduction in bicycle import tariffs in Kenya increased bicycle sales from 9.5 in 2001 to 16.4 in 2002 (Gauthier and Hook, 2005).

It is well known that the cycling culture varies among different countries and societies (Simion, 1996 and Grieco *et al.*, 1994). This study found a low bicycle ownership in urban settlements as compared with other types of settlements (peri-urban, rural with services and remote rural). Factors that affect bicycle ownership and/or usage could be socio-economic, cultural or environmental. Unlike most Western countries, cyclists in urban areas of Sub Saharan African countries face several obstacles. Many people feel cycling is unsafe because of the aggression and carelessness exhibited by drivers of trucks, buses and private cars in urban areas (Heyen-Perschon, 2004). In fact, potential cyclists in urban areas of Kenya and Senegal have cited danger as the main reason for choosing other modes of transport (World Bank/UNECA, 1997). Additionally the built

environment in most urban areas lacks adequate space and infrastructure to support cycling thereby creating spatial competition between cyclist and other road users (GODARD, 2000). For instance, most streets in Accra and Kumasi (the biggest cities in Ghana) lack bicycle lanes and hawkers often congest roads making even walking difficult. Culturally, the higher-income groups who are often found in urban areas have a negative image of cycling and view it as a transport tool for poor rural dwellers (Heyen-Perschon, 2004). Thus, one could speculate that although urban dwellers may have the economic means to own bicycles, bicycle ownership remains low in urban areas in Sub Saharan African as seen in this study. It is necessary however to reiterate that bicycles sales do not equate with ownership, and bicycle ownership does not equate with bicycle use.

Although our study found a significant difference in bicycle usage among the four settlements within the two ecological areas, the highest and lowest bicycle usage was not necessarily recorded in settlements with lowest and highest bicycle ownership respectively. Urban settlements which had the lowest bicycle ownership in children's households (13.7%) had a bicycle usage of 70%, which is higher than that of rural with services (63.5%) which had the highest bicycle ownership (38.3%). Thus other factors in addition to bicycle ownership influenced bicycle usage. Evidently, bicycle usage was higher than bicycle ownership in all the settlements studied. This observation brings in to sharp focus the importance of bicycle hiring services and sharing of bicycles in our study population. The actual role of bicycle hiring and sharing warrants further investigation.

Bicycle usage was apparently high (68.5%) in our study population. However a closer look at frequency of usage gave a clearer and more accurate picture of bicycle usage. This study revealed that only 8.3% percent of our study population used bicycles on a daily basis. Thus, although the majority of our study population might have had an occasional experience with bicycles, use is still limited.

This study corroborates others that have found an association between bicycle use and gender (Grieco et al, 1994; Heyen-Perschon,2004; Porter 2003; 2008; Cunha-Jacana, 2006). Culturally defined gender roles in Ghana (and in some other African countries) can limit the social acceptability of bicycle riding for women and girls. Such restrictive gender roles and relations represent an extension of the wider problem of female disempowerment and under-representation in the public sphere, and can contribute to undermining development initiatives such as the introduction of bicycle trailer technology in Northern Ghana (Salifu, 1997).

Consistent with other studies (Xing et al, 2008; Pucher and Buehler, 2007) bicycle use was associated with age in our study. The observation that bicycle use was higher among older children than in younger ones could be attributed to the risk of accident associated with its usage. Regardless of this, it unveils the potential of children using bicycles to access opportunities and social amenities, particularly education. Through the Shova Kalula project in South Africa, a growing number of children who commuted long distances to school now have bicycles to make their journeys shorter and less tiresome (Department of Transport, 2007; Makapela, 2008). However, this study has shown that only 1% use bicycles to commute to school whilst 98% walk to school, regardless of the long distances that may be involved. The use of bicycles to access health care is yet to be harnessed as has been done in some other African communities with mobility constrains (Heven-Perchon, 2004). In our study we found bicycle use for health-seeking was restricted to the use of bicycles to commute to the nearest taxi terminal, to hire a taxi to transport sick individuals to access healthcare. As evidenced by this study, the majority of bicycle use (98%) was for running errands and recreation. A conscious promotion of cycling for a wider range of purposes may be required to influence young cyclists to diversify their bicycle usage.

### *Conclusion*

This study has examined bicycle behaviour among children from two different agro-ecological zones in Ghana. Although a majority of children have had occasional experiences with cycling, routine cycling is still very low in the study regions. This study found the majority of young cyclists ride for fun, with less than 1% of children using bicycles to access education. Apart from an observed increase in bicycle ownership over the last five years, the study also identified a discrepancy between bicycle ownership and usage which seems to be filled by hiring or sharing. Attitudes of parents, friends, teachers and auto drivers have to a large extent shaped the cycling culture among children in the study sites. Bicycle use is more recreational than utilitarian in these sites and efforts to increase cycling culture would be valuable.

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