

論文の内容の要旨

論文題目 Design and Safety of Pedestrian Facilities in Dhaka City, Bangladesh
(バングラデシュ・ダッカ市における歩行者施設のデザインと安全に関する研究)

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Walking is by far the most important mode of transport, as it not only acts as a crucial link for inter-modal transfers in major activity centers, but also helps to fulfill recreational and utilitarian trips. When designing circulation systems, it is important to recognize that walking is not only an integral part of the network, but that it can also fulfill many activities in an environmentally sensitive way. A comfortable environment makes a journey by foot pleasant and enjoyable. However, in Dhaka city, about 60% trips are making on foot everyday but the pedestrians are facing many problems while using the walkways. A lot of research works are going on for assessing the pedestrian's level of services in the developed nations but in developing countries like Bangladesh, it is not a significant one for the transport planners. It is because; the transport planners or researchers are always emphasizing the problems of the motorized vehicles. Besides, budget allocation is not sufficient to continue research in the field of pedestrians. For instance, this paper tries to emphasize the problems of pedestrians and to explore the qualitative level of comfort of the pedestrians in Dhaka City by offering a method. Six broad categories have been observed during the field survey to assess the roadside walking environment in terms of i) safety, ii) security, iii) convenience and comfort, iv) continuity of the walkway, v) system coherence and vi) attractiveness by some specific facilities. Five different blocks have been selected to assess the qualitative data. Those five blocks have different characteristics like: shopping area, residential area, Central Business District, Mixed use area and Transit area. Primary data has been used to compare the roadside walkway environment. Qualitative data have been collected from observation survey whereas the walker's responses have been recorded through questionnaire survey from the field. Field survey has conducted during January 2004 and March 2005. During weekdays, three different time period have been selected for the questionnaire survey as: peak hours in the morning, off peak hours in the noon and again peak hours in the afternoon. Total 500 questionnaire samples have been surveyed in five blocks of the study area. Five different areas represent some different type of problems and scenario. As for example, the CBD area shows better walking environment than in transit area in respect to the width of the road whereas, the Mixed use area represents highly susceptible to security than in the residential area. On the other hand, people are not using footpaths for many reasons in the five studied areas. In the transit area, people thought placement of the bus stops on the walkway force them to avoid the walkways and in the shopping area, illegal parking hinders the smooth pedestrian flow. In this study, an integration of several variables has been formed by using the software TSP. Variables like socio-economic data, observation survey and the responses from the walkers (subjective evaluation) all are included in the model to test the goodness. In the result, it can be seen that age, sex and income are some of the determinants for evaluating the walkway's condition of Dhaka City. At the same time, it can be seen that the observed existing condition like width of walkway or the continuity of the walkway surface also affect the total

evaluation of the walkways. In the same way, buffers that segregate the walkway space from the road space also influence the pedestrian's evaluation with their heights and materials. In the light of this method and model, other observation values have been evaluated with the possible linkages among socio-economic and subjective variables. Apart from this, a set of choices have been surveyed for understanding the pedestrian's choices for assessing the importance of some several prescribed criteria. Analytical Hierarchical Process (AHP) has been used for analyzing the choices of walkers in Dhaka City with the prescribed criteria. Outcome result shows that security is the most important factor for the walkers in Dhaka City among other six prescribed criteria. Walkers are very much conscious about the security on the walkways especially in the night time. However, convenience and comfort is the next thing to follow among other criteria that have been cited here in the present study. This outcome result will help the researchers and the policy makers to know the crying needs for betterment of walkways in the mentioned study blocks. By far, this study contributes the factors that are very important to assess the roadside walking environment in a developing country's city with some attributes, highlighting the case in Dhaka. Besides, some specific recommendations propose the better way to manage the walkways as well as to increase the total convenience and comfort.

The thesis is divided into 8 different chapters that highlight the issues of pedestrians and the status of Dhaka city with related data collected from field survey as well as from other academic papers and relevant books. After summarizing the data and analyzing it with some relevant methods, it can be seen that the walkway's present condition are not good enough for the walkers in different aspects according to their minimum needs. However, this study will surely work as a pioneer one for the case of Dhaka City and the data can further be used for exploring more opportunities in the same line.