ADDIS ABABA UNIVERSTY

ADDIS ABABA INSTITUTE OF TECHNOLOGY

SCHOOL OF CIVIL AND ENVIROMENTAL ENGINEERING

DEVELOPING LEVEL OF SERVICE MODEL FOR PEDESTRIAN SIDEWALKS

(CASE STUDY OF ASHEWAMEDA TO HOLETA)

A Thesis in Road and Transport Stream

By Fikirtework Demisse

The Thesis Submitted to School of Graduate Studies of Addis Ababa University

In Partial Fulfillment of the Requirement for the Degree of Master of Science in Civil and Environmental Engineering

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Approval by Board of Examiners

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UNDERTAKING

I certify that research work titled Developing level of service model for a pedestrian sidewalk (case study of Ashewa meda to Holeta) is my own work. The work has not been presented elsewhere for assessment. Where material has been used from other sources it has been properly acknowledged / referred.

Fikirtework Demisse	
Name	Signature

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LIST OF ABBREVIATIONS

AADT……..Average Annual Daily Traffic

AASHTO…….. American Association of State Highway and Transportation Officials

ERA…….....Ethiopian Roads Authority

HCM ……..Highway Capacity Manual

LOS…….Level of Service

M ……..Meter

Max ……Maximum

Min ……Minimum

PLOS ……Pedestrian Level of Service

SPSS…….. Statical Package of Social Science

QOS ……. Quality of Service

ABSTRACT

Walking is one of the most important travel modes in the world so pedestrian facilities need to concern while transportation planning, construction, and management. However in our country road design manual for urban sections outside Addis Ababa are classified on depend on the governmental administrative system (Kebele, Wereda, Zone, and Region). Ethiopian Road Authority geometric manual provide road Cross-sectional elements depend on the administrative classification system. Forecasted Population, roadside settlement, and growth of pedestrian numbers are not concerned. Not giving attention to the pedestrian facilities arises with questions after the road has been constructed, also the performances of the sidewalks are come to be inadequate and poor. Also Despite with insufficient sidewalks comes with the poor performance of the walkway. The performance of the sidewalk is measured by the pedestrian level of service (PLOS). PLOS is Assessing, describing existing conditions, and evaluating the overall Quality pedestrian facilities.

In this research, it needs to address model representing the PLOS with various factors which influence the level of service for roadside walkway including pedestrian perceptions. The study is conducted in Ethiopian, for the Case of Oromia Special Zones surrounding Addis Ababa from Ashewa meda to Holeta. Data collection was done by questioners and site surveying. The selected factors which influence PLOS for the study area are Safety, Comfort, Width of a sidewalk, surface condition of the sidewalk, and Zebra crossing. 876 Questioners were distributed and collecting pedestrian perception on the factors of PLOS. Participants are represented a cross Section of age, gender, and walking experience. Also, field surveying was conducted to collects road cross sectional elements and overall condition of the site.

Ordered logit model was used to develop a model by Identification and relate to factors affecting PLOS. On correlations of the variables, all Predictors are strongly correlated and statistically significant. With **Pseudo-R^2**=78%. The model contained all eight predictors and with no variables removed, PLOS was predicted by Zebra crossing, Width, Surface, Comfort Safety, length of walking, frequency and time of walking.

By using the developed model the PLOS is ranging A to F, finally with the last model the study areas' pedestrian level of service is evaluated.

1. INTRODUCTION

1.1 Background

In Ethiopia, cites which are surrounding Finfine are on the process of highly developing with economic and social movement as a result of near to the capital city of Ethiopia. Ashewameda, Menagesha, and Holeta are the towns that are located on the new Addis to Ambo road Consequence of the construction of this road settlement, industrial parks and the numbers of pedestrians are increasing day to day. The study areas are selected because of it is in highly developing process and also there are a pedestrian facility problem is observed. Most of the researches are focused on urbanized section and in this study it is wanted to show there is also a pedestrian walk way problem out of highly urbanized area.

For new road designing American Association of State Highway and Transportation Officials (ASSHTO) design manual defines urban and rural roads by population settlement around the road. Urban and rural areas have fundamentally different characteristics concerning density and types of land use, the density of street and highway networks, nature of travel patterns, and how these elements are related. Consequently, urban and rural functional systems are classified separately AASHTO (2001).

On the ERA manual, the design standards of the road are classified depends on Average Annual Daily Traffic (AADT) on the number of traffic. By using the forecasted AADT the design standard for the road is selected. Then depending on the road class, the designer will refer the shoulder width for a rural section on ERA geometric manual table 2.2 for all road class and Sidewalk width for Kebele, Wereda, Zonal, Regional and Addis Ababa seat are located on the geometric manual Appendix F9-F13 Ethiopian Road Geometric Manual (ERA) (2013)). There is no study, guideline, or preconditions to consider forecasting pedestrian for the designing area and pedestrian needs are not included.

Walking is one of the most important travel modes in our country. However, pedestrian concerns are nearly always neglected in transportation planning, construction and management. As efforts to make more environmentally friendly facilities increasing, pedestrians are getting more and more attention. Consequences of not considering population, roadside settlement, and inadequate pedestrian facilities after the construction of the road the pedestrian issues are raised.

Assessing the overall Quality of Service is check by the pedestrian level of service (PLOS). The level of service is a tool for describing existing conditions and evaluating the overall Quality of Service (Asadi-Shekari et al. 2013). The quality of sidewalks is normally assessed by Quality of Service (QoS) levels.

To measure the facility of sidewalks, pedestrian perceptions have to be engaged in attention. But the majority of the sidewalk assessment tools for encouraging the pedestrian environment depend on experts' judgment which results in biased outcomes that ultimately result in neglecting pedestrian needs and expectations. And most of the Pedestrian Level of Service (PLOS) standards that have developed so far to assess the service quality of pedestrian facilities have been estimated using experts' opinions and not from pedestrians' perceptions.

For example development of a model for the estimation of pedestrian level of service in greek urban area, it consists three major factors which are traffic, geometric/environmental and pedestrian facilities and all parameters are recorded by the expert.

Thus, the need for an efficient, compatible, and applicable method to assess the quality performance of sidewalks at street level. Tan Dandan introduces a PLOS method to assess the service quality of sidewalks at street level using pedestrians' perceptions of (Tan Dandan et.al 2007). Therefore, evaluating the operating conditions of pedestrian movement by LOS is strategic for planning new facilities and for evaluating existing ones as well.

This research tried to assess the pedestrian Level of service for the overall sidewalk on Ashewameda, Menagesh, and Holeta road segments by collecting and analyzing data for identified factors that influenced PLOS. Also, the studies model PLOS and evaluate the services for the section.

1.2 Statement of the problems

Ashewa meda, Menagesh, and Holeta are located surrounding Finfine adjacent to the new Ambo Road. Due to quick urbanization and settlement along the road, numbers of the pedestrian are increasing day today. As pedestrians are the one major traveler on an urban street, it needs to provide safe pedestrian facilities. However, in our country pedestrian needs and pedestrian facilities on newly constructed roads are not considered while designing the road. The new roads are designed using the forecasted AADT. There is no study, guideline, or preconditions to consider forecasted pedestrian facilities specifically for the designing area of the pedestrian situation and consequently of rapid urbanization along a new road. Also there is no follow up and maintenance on the constructed sidewalk .Not giving attention to the pedestrian facilities arises with questions after the road constructed, the performances of the sidewalks are come to be inadequate and poor. On the study area, insufficient and poor sidewalks performance are observed, pedestrians use carriageways with disturbing traffic vehicle, not feel safe and comfort while walking. The capability of the pedestrian facilities of the road is evaluated by the pedestrian level of services.

1.3 Objective of the Study

The main objective of this study is to develop a model of pedestrian level of service at footpath by considering pedestrian perception all over the condition of the sidewalk.

The General objective of the research;

To develop a model representing the pedestrian LOS for the study area with various factors that influence the level of service for roadside crosswalks in Ethiopian for the Case of Oromia Special Zones surrounding Finifine from Ashewa meda to Holeta.

The Specific objectives are;

- To identify the relationship between various influencing factors and pedestrian LOS in the roadside conditions.
- To develop a model representing pedestrian LOS with influencing factors
- To define the limits of different pedestrian LOS (A - F)
- Define the study area PLOS by using the developed model

1.4 Scope of the Research

The study focused on modeling pedestrian level of service by collecting questioner and field data for selected area from Ashewa meda to Holeta. Model design is analyzed by using SPSS with stepwise regression analysis based on the questioner collected and width of sidewalk that used to evaluate performance of existing pedestrian walkway .When collecting questioner data there are drawback while filling the answer, as pre education level, age, intelligent ability of the pedestrian. As per the design is depend on the questioner data it come some constraint on the result.

1.5 Significance of the research

This study contributes that by using the developed model Evaluate the pedestrian walkway capacity, if it is in good or poor condition. If it is in poor or uncomfortable condition to inform and recommended to encourage it for the responsible body.

1.6 Research Outline

The thesis work is organized into five chapters and associated with Annex. The first chapter is an introduction that includes background, statement of the problem, objectives, and significance of the study as well as the overall thesis outline. Chapter two discusses the theoretical framework for the study and review of earlier studies. Chapter three presents the research methodology in detail. Chapter four is about results and discussion. And the last chapter, chapter five, is concerned with conclusion and recommendation. Finally, annex in the form of tables that serving as a supporting document to this thesis is attached to make the work a complete one.

2. REVIEW OF LITERATURE

2.1 General

To represent an integrated picture of facilities for pedestrians, it is important to review, compile, and organize the current state of researches that assesses level-of-service (LOS). The literature review is focused on the review of earlier studies regarding the pedestrian level of service at pedestrian's sidewalks. Review literatures are used for Place each work in the context of its contribution to understanding the research problem being studied and to Reveal any gaps that exist in the literature.

2.2 Pedestrian facilities on design Manuals perspective

2.2.1 Side walk width

Different manuals provide standards for urban sidewalk width as per the country condition.

AASHTO

Sidewalks should be provided along both sides of urban collector streets that are used for pedestrian access to schools, parks, shopping areas, and transit stops and along with all collectors in commercial areas. In residential areas, sidewalks are desirable on both sides of collector streets but should be provided on at least one side. The sidewalk should be situated as far as practical from the traveled way, usually close to the right-of-way line. For further information, see the section on "Sidewalks" in Chapter 4. Additional design guidance on sidewalks can also be found in the AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities.

The minimum sidewalk width should be at least 1.2 m in residential areas and should range from 1.2 to 2.4 m in commercial areas. Sidewalk widths of at least 1.5 m are recommended.

Sidewalk curb ramps should be provided at crosswalks to accommodate persons with disabilities (AASHTO 2001).

ERA Manual

When we come to our country ERA classifies urban areas based on the governmental administrative system into kebele, Wereda, Zonal & Regional seat. The figure below shows the typical section for each classification.

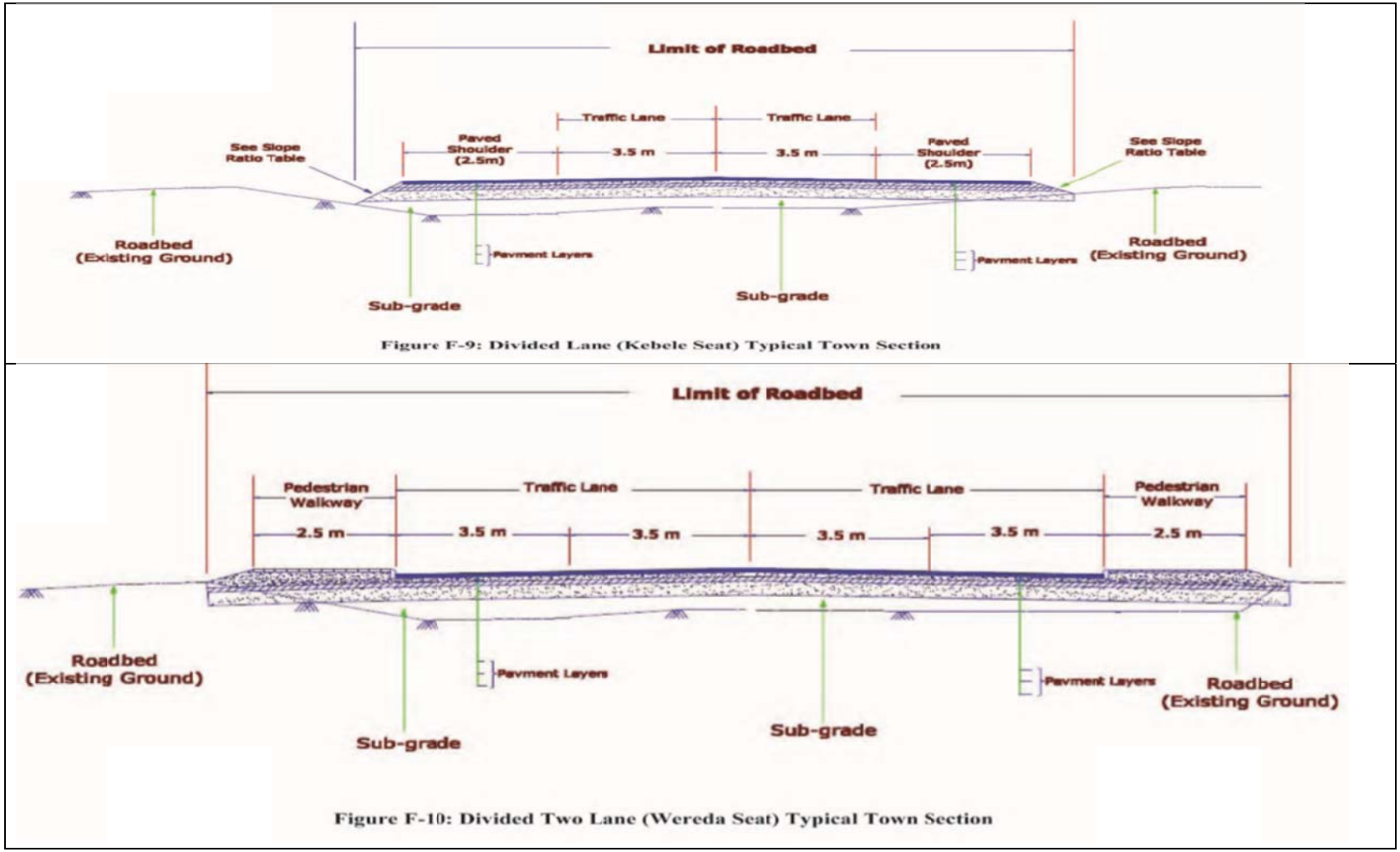


Figure 2-1: Ethiopia urban typical road section for Kebele and Wereda ERA (2013) .

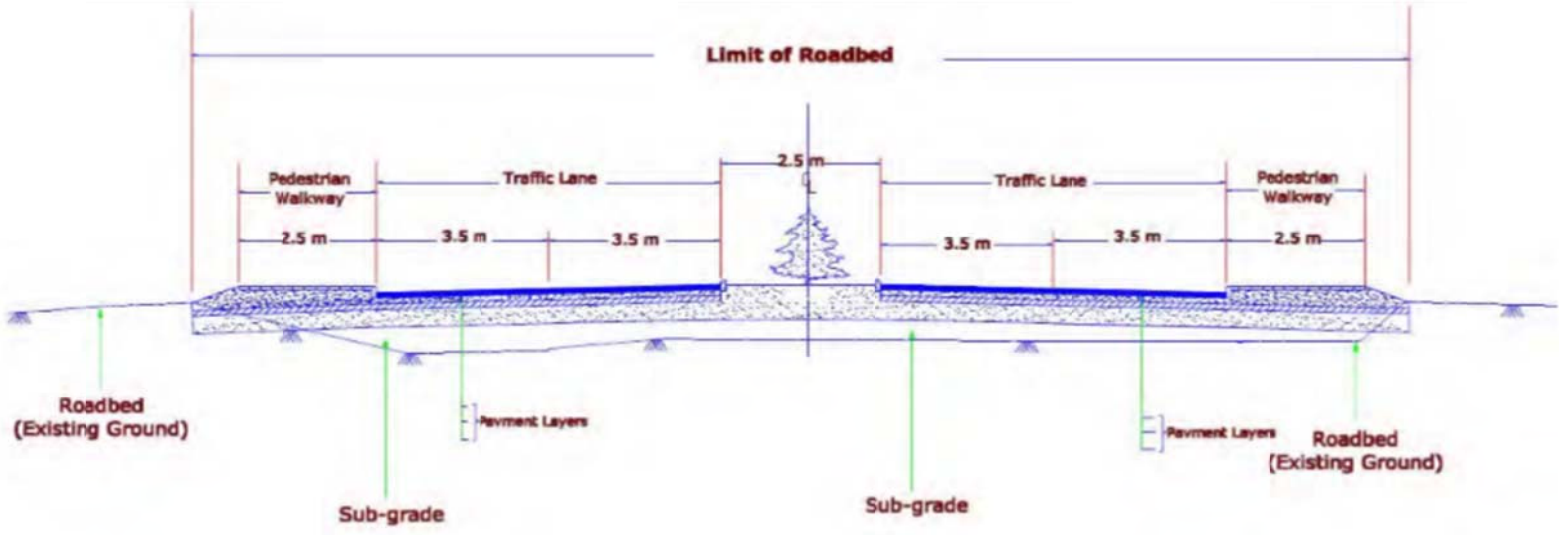


Figure F-11: Divided Two Lane (Zonal Seat) Typical Town Section

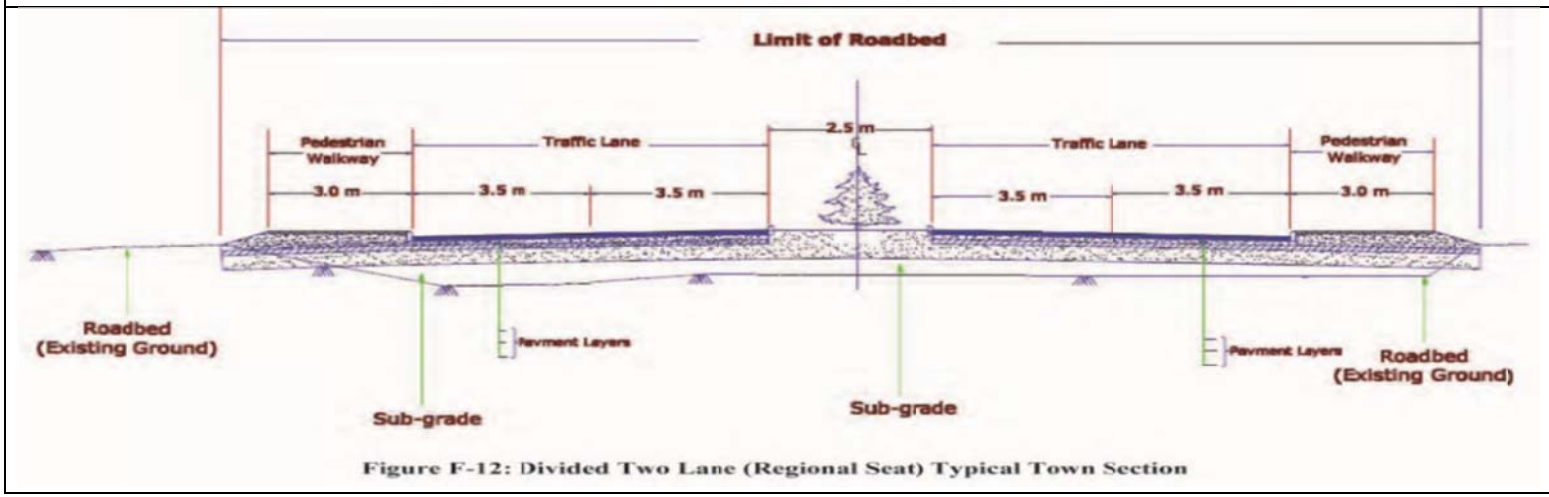


Figure F-12: Divided Two Lane (Regional Seat) Typical Town Section

Figure 2-2: Ethiopia urban typical road section for Zonal and Regional seat ERA (2013).

As can be seen on the drawing ERA manual classifies the Road Town sections as per the administrative class of the government system. There is no guideline to check the town type according to population, economic type, or social system.

2.3 Concept of Level of Service

The level of service is a tool for describing existing conditions and evaluating the overall Quality of Service (Asadi-Shekari et.al 2013). The quality of sidewalks is normally assessed by Quality of Service (QoS) levels.

The 2010 HCM includes methodologies for calculating PLOS as part of the "Multimodal LOS" analysis. The PLOS score intends to provide a way of measuring the supposed levels of safety and comfort of pedestrians walking along with a roadway environment. The numerical score is then translated into a pseudo-academic letter grade scaled from "A" to "F" using the stratification shown in the table below.

Table 2-1 : Pedestrian LOS Numerical Score vs. Letter Grades repeated

Numerical LOS Score	Letter Grade
<1.5	A
>1.5 and <2.5	B
>2.5 and <3.5	C
>3.5 and <4.5	D
>4.5 and <5.5	E
>5.5	F

Source: HCM 2010

There is a perception amongst practitioners that the existing HCM methodology does not provide results that are consistent with actual conditions along a roadway based upon the constituent links and intersections. This project is to develop a model that provides more intuitive results than the existing HCM model. The model is to be developed using theoretical constructs tested against existing evaluations. The table indicates "<1.5" is for Excellent pedestrian walkway condition and " >5.5" is Very poor and indicates the worst condition and it will be represented by letters A to F (HCM 2010).

2.4 PLOS Modeling

For the construction of new sidewalks and maintenance of existing sidewalks, the estimation of the pedestrian level of service (PLOS) is needed, for which there is no proper methodology in India. The study aims to propose a method for the evaluation of PLOS at the sidewalk, based on quantitative and qualitative data. The required model parameters were collected from video graphic and questionnaire surveys conducted at selected nine sidewalks in Chennai, India. Significant parameters were identified and the PLOS model was developed using the stepwise regression analysis method. The significant parameters are sidewalk surface conditions, the presence of guardrails, and the presence of barriers traffic volume, sidewalk width. The developed model was validated using the field data and the results showed that the performance level of the proposed model was more precise and produced reliable solutions. The model applications were proposed and analyzed theoretically with three improvement measures. The developed model can be used by road designers to find the wellness of a particular sidewalk that accommodates pedestrian travel mode (Sankaran Marisamy Nathan and S. Lakshmi 2016).

Nursyamsu Hidayat has presented an alternative model for evaluating the pedestrian level of service at the sidewalk with street vendor activities. Variables in the model include pedestrian perceptions of walking condition based on interview surveys as well as the pedestrian traffic flow and pedestrian behavior as the impact of street vendor activities. The presence of street vendors along the sidewalk is considered important in the proposed model. Data collections, which are conducted in Bangkok and Jakarta, include pedestrian interviews and pedestrian traffic surveys. Factor investigation is used to summarize pedestrian perceptions into several important variables. Then, along with pedestrian traffic data, regression models are estimated to find a level of service as a function of the pedestrian perceptions of comfort and problem caused by vendor activities, pedestrian volume, and the number of a pedestrian who interacts with street vendors (Nursyamsu Hidayat et al. 2011).

According to Jitendra Singh Yadav, 2015 the factors influencing pedestrian Level of service at crosswalks of signalized intersection and proposed a method to determine the pedestrian level of service at signalized intersection crosswalks by manipulating and quantifying the pedestrian perceived overall satisfaction level. A pedestrian survey was conducted to collect pedestrian satisfaction levels in terms of safety, comfort, and convenience for each crossing at the signalized intersection variables pedestrian's experiences at the actual sites. The pedestrian overall satisfaction level was considered as the dependent variables for the regression analysis. Also a field survey was conducted to collect geometric, operational and traffic characters-turning each crosswalk at left-turning signalized intersection. Crosswalk holding area, crosswalk marking, motorist behavior, left turning vehicles volume, left turning vehicles speed, red timing for model pedestrian, were identified as the main factors affecting pedestrian LOS at the intersection The percentages overall satisfaction level model were developed by into stepwise multivariable regression analysis using SPSS software. Percentage of pedestrian overall satisfaction was then transformed to six levels of categories. The resulting general model has a high correlation

coefficient (R2=0.931) with the average observations, and it applies to most of the developing cities of India like Bhopal. This model provides traffic planners and others the ability of rating signalized intersection crosswalks according to pedestrians' overall satisfaction level. This model may be used for evaluating existing signalized intersection, designing new signalized intersection, or redesigning existing signalized intersection (Jitendra Singh Yadav et al. 2015)
T. H. Huang has provides an efficient procedure for the evaluation of the level of service (LOS) on the pedestrian environment. Since LOS measuring for pedestrian facilities are not well considered until now. Moreover, the safety and comfortable factors of pedestrian facilities are important for the original pedestrian facilities designing, but fewer researches had concerned about the facilities of the pedestrian walking environment. The study used the general variables on the pedestrian walking environment and step-wise to set up the model. Collect reliable data about the pedestrian walking environment, included lateral clearance, traffic characteristic, and pedestrian characteristics of 263 streets in Taipei city. Secondly, we provided an efficient method to understand how a particular street accommodates pedestrian travel well, a fuzzy procedure of combining comfortable index and safety index was processed on a pedestrian walking environment. Finally, we demonstrated the model of pedestrian LOS based on identified attributes (T. Huang and Keelung Taiwan2007).

A Florida Department of Transportation sponsored documents study which develops a Level of Service (LOS) model that represents pedestrians' perceptions of how well urban arterials with sidewalks (a combination of roadway segments and intersections) meet their needs. The model integrates road traffic measurements on the contiguous roadway and experience (i.e., crossing widths) at conflict points with intersections and driveways. Data for the ideal were gotten from an advanced "Walk for Science" field data collection occurrence. The data contain of members' perceptions of how well town arterials with footways meet their requirements as Pedestrians traveling beside the street. The Pedestrian LOS model for roadway facilities described in Petritsch is based upon Pearson correlation examines and stepwise regression modeling of around 500 combined real-time perceptions (observations) from pedestrians walking a course along a typical U.S. metropolitan urban area's streets. The study participants represented a cross-section of age, gender, walking experience, and residency. Although further hypothesis testing may be conducted in a future study, the resulting general model for the Pedestrian LOS of urban arterials with sidewalks has a high correlation coefficient (R2=0.70) with the average observations and is transferable to a significant number of metropolitan areas in the United States. The study reveals that traffic volumes on the adjacent roadway and the density of conflict points along the facility are the primary factors in the LOS model for pedestrians traveling along urban arterials with sidewalks (Petritsch, et al 2015).

2.5 Assessment of pedestrian facilities

Several literatures are available about assessing the Pedestrian Level of Service (PLOS), which uses different approaches and different Measures of Effectiveness or attributes to characterize the PLOS models.

There are many tools and techniques developed for the evaluation of sidewalks at the road level. But most of the tools have mistreated the significance of making an allowance for pedestrians' perception in assessing the Pedestrian Level of Service (PLOS) of sidewalks. Therefore, in contrast to the earlier research work at the level of service of sidewalks, it was developed a PLOS model to assess street-level sidewalk infrastructure facilities from a variety of property uses considering pedestrians' perceptions. The study specifies 10 sidewalk characteristics that provide various pedestrian needs based on the type of land uses where they belong to. The proposed method has been tested in five Indian cities viz; Delhi, Mumbai, Vadodara, Surat, and Ahmadabad. The results of the study indicate that PLOS is able of identifying the main inadequacy of the road network and sidewalk infrastructure in the form of physical and user characteristics. This method allows pedestrians to express their needs and outlook to city planners and thus demand improving existing sidewalks (Bivina G.R et al. 2018).

Most city midpoints are compressed with heavy pedestrian flows. Despite sufficient sidewalks, pedestrians use carriageways creating life threats and disturbing the smooth traffic flow. Since the pedestrian group is heterogeneous, the primary objective is to develop an unbiased methodology to evaluate the most vital attributes influencing to evade the sidewalks. Width of sidewalks, availability of obstacles, opposing pedestrian flow rate, availability of safety rails are few of the sidewalk characteristics which mainly influence the usage of carriageways. With equally independent attribute factor levels, nine hypothetical profiles were developed to evaluate the pedestrians' unwillingness to use the sidewalks. A sample of pedestrians completed the stated-preference survey by ranking the nine profiles. The results indicate 'availability of obstacles' is the most weighting factor while 'opposing pedestrian flow rate' becomes second. 'Availability of safety rails' is the least influencing factor. Total Utility Value is calculated for selected sidewalks by assigning the appropriate quality levels and substituting the part-worth utility values obtained from conjoint results. To increase the usability of Conjoint Analysis, results were connected to pedestrians' actual willingness to use the sidewalks. Thereby, a Pedestrian Preference Score is defined for each sidewalk. A low Pedestrian Preference Score value and a low Total Utility Value were observed for the least using pedestrian sidewalks and higher values of Pedestrian Preference Score and Total Utility Value were observed for the footways with high pedestrian flow. This linear relation between Pedestrian Preference Score and Total Utility Value designates Conjoint Analysis is a better methodology to cluster the sidewalks based on pedestrians' preference and sidewalk characteristics. This confirms that Total Utility Value can be used as an index to cluster the sidewalks. Based on the selected threshold values for this index, the sidewalks are graphically presentable with mapping tools available with ArcGIS. This index, which is defined as the 'Pedestrian Sidewalk Index', represents a reliable information source using the qualitative decisions of the pedestrians (Vasantha Wicramasinghe and Sunanda Dissanayake2016).

The sidewalk is a significant part of the urban walking traffic system, the service feature affects the route townsman choose when they go out. In a different way from the traditional research,

which takes traffic flow operation as the assessing standard for the level of service for vehicles, taking pedestrian comfort and safety into consideration, the methods of assessing the pedestrian level of service by analyzing the relationship between the pedestrians' subjective perceptions and the quality of the road physical facilities as well as the traffic flow operation. Based on a mass of data and using statistical software SPSS, established the primary factors which influenced the pedestrian level of service for sidewalk and the main factors are safety and comfort (Tan Dandan et al. 2007).

2.6 Rating PLOS and Parameters

The examined road segment is assessed by using nine superiority factors: clear determination of the street limits (enclose/definition), the difficulty of path network, building articulation, the complexity of the distribution of public places, the existence of shelters, tents, and varied rooflines, the existence of buffer zone existence of trees, accessibility and natural/physical characteristics and condition of the sidewalk. For every factor, a grade is specified from LOS A=4.0 to 5.0 =very pleasant LOS B=3.4 to 3.9 =comfortable LOS C=2.8 to 3.3 =acceptable LOS D=2.2 to 2.7 =uncomfortable LOS E=1.6 to 2.1 =unpleasant LOS F=1.0 to 1.5 =very unpleasant. The result implies that 1(=very bad) to 5(=very good). the average of all grades defines the level of service (A-F) referring to a table (Jaskiewicz F, 2000).

Three categories of factors affecting walkway user movements can be recognized in sidewalk capacity, environmental quality, and safety/comfort. The mathematical model established by the research team Landis et al has the following basic variables: sidewalk presence, lateral separation from vehicle traffic, volume, and speed of vehicles. These variables were determined by a survey where pedestrian aspects were recorded with regards to the safety they felt in specific spots selected by the research team. The numerical results of the model correspond to a certain level of service (A-F) with giving a table (Landis B. et al 2001).

Main Roads of Western Australia Consultants, which intended to improve procedures for evaluating the Level of Service (LOS) of pedestrian accommodations in Western Australia. Procedures occur for assessing vehicular traffic LOS (Aust roads) and cycling LOS (Main Roads WA). The formulation of LOS guidelines for pedestrians completes the LOS framework for vehicular, bicycle, and pedestrian traffic. Pedestrian LOS is an general measure of walking conditions on a route.. This is related in a straight line to influences that affect mobility, comfort, and safety, reflecting pedestrians' perceptions of the degree to which the facility is 'pedestrian-friendly'. A single model based on several factors affecting pedestrian LOS was developed to facilitate LOS measurement. These factors fall into three categories: physical characteristics, setting factors, and user factors. These factors were subjective by relative meaning and a LOS scale was developed to define the LOS of pedestrian walkways. Pedestrian situations are defined complete a LOS rating from LOS A (ideal pedestrian condition) to LOS E (unsuitable pedestrian conditions), based on an calculation of the influences affecting LOS. The valuation contains desktop and on-site assessment of LOS factors. The expansion of the

model was an iterative procedure that involved testing and refinement. The research was undertaken and the LOS model developed to provide a sound basis for the ongoing measurement of LOS for pedestrians. The model not only provides the opportunity to test the LOS provided by a pedestrian route but also determines which factors contribute to low and high LOS. which are grouped into three general categories: design (corridor width, the surface quality of the corridor, obstacles, crossing opportunities, support facilities)Location(connectivity, corridor environment, probability of an accident with a vehicle per km)and users (pedestrian flow, users' categories, personal safety).depending on the characteristics of the examined segment, every factor is graded in the range of 0-4(with 4corresponding to sidewalks wider than 2m).the weighted sum of all the graded defines the pedestrian level of service (A-E) (Gallin, N 2001).

Developed in Denmark and based on a study for the assessment of the satisfaction of pedestrians during their movement. The utility equation developed has the following variables: land uses, volume an average speed of vehicles, pedestrian and bicycle volume, buffer zone width, on-street parking, the existence of central traffic island, infrastructure width number of trees, and numbers of traffic lanes. It resulted in six levels of satisfaction, which defines the level of service (A-F) about a given table (Jensen, S. U.2007)

Factors affecting pedestrian LOS have been defined and they were weighted by relative importance. In the case of sidewalks, the result indicates that the factor 'flow rate' has greater importance than other factors. At the crosswalks turning vehicles have much impact on pedestrians than the other factors. Finally, a method for the assignment of pedestrian LOS was developed based on identified attributes. The study provides the method to determine the LOS of a pedestrian path, as well as factors contributing to low and high LOS Based on the estimation the total value of utility taking into consideration parameters such as sidewalk width lateral separation from traffic, obstacles, pedestrian volume, and pedestrians 'bicyclist interaction. The estimated total utility of a sidewalk defines the pedestrian level of service (1-3) concerning a given table (Muraleetharan et al. 2003).

The Gainesville Mobility Plan Prototype was developed as the congestion management system plan for Gainesville, Florida, and incorporated level-of-service (LOS) performance measures for bicycle and pedestrian facilities. The LOS evaluations describe the degree of bicycle and pedestrian accommodation in a transportation corridor. The bicycle LOS measures are designated: basic facility provided conflicts, speed differential, motor vehicle LOS, maintenance, and provision of transportation demand management programs or intermodal links. Pedestrian LOS criteria are similar and incorporate specific pedestrian features. The Gainesville bicycle and pedestrian LOS performance measures use a point scale resulting in a LOS rating system of A through F. The scoring system was developed with sensitivity to characteristics that may be mutually exclusive or inclusive to determine all possible combinations of points. The methodology hypothesizes that there is a critical mass of variables that must be present to attract non-motorized trips. The methodology is applicable for corridor evaluations on arterial and

collector roadways in urban or suburban areas. The criteria include measures of programmatic and off-street projects such as rail-trails, bicycle parking, bikes-on-transit, employer-based programs, and so forth, in addition to traditional on-street facility improvements. By measuring such improvements recommendations for more diverse projects can be supported. This analysis was applied to several roadways with promising results that generally corresponded to user perceptions of the facilities. LOS evaluation was used as a tool for the congestion management system to develop project recommendations and priorities, but it may also be useful in concurrency and long-range transportation planning. Created and applied in the city of Gainesville (Florida) as part of a mobility plan for congestion management. basic criteria: facility type, pedestrian-vehicle incidents, the existence of facilities that accommodate pedestrian-vehicle incidents, the existence of facilities that accommodate pedestrian movement, vehicle level of service, maintenance, demand management programs, and support for multimodal transport (Dixon 1996).

2.7 Evaluation of PLOS

Walking, as the first mode of transportation, has an effective role in human life. Quality of walkways is also a major factor that encourages walking. The increase of vehicular traffic in recent decades turned the pedestrian safety of the conflicted zones, like crosswalks, to one of the main concerns of urban dwellers. Pedestrian safety in Tehran is evaluated by determining the level of service of crosswalks. As a multifunctional public urban space, Nabovat square, which is located in the eastern part of Tehran, is selected as the case study of the research. This empirical study tends to determine the level of service of crosswalks around Nabovat Square using the models presented in Highway Capacity Manual 2000. Consequently, the risk which a pedestrian takes to pass the crosswalks is also determined. Most of the data were collected through direct observation of the area at different times of the day. Additionally, some statistical data such as traffic flow and width of crosswalks were collected from Tehran Comprehensive Transportation & Traffic Studies Company. Finally, the result of the study provides evidence that clarifies the lack of safety in the crosswalks of Tehran. The evaluated result can be considered as one of the great concerns of Tehran's residents, therefore, recommended improvement measures have been included to enhance the level of service of crosswalks, and some suggestions have been presented for further studies (S. A. Daneshpour and B. Abbasii 2014).

In India pedestrians usually cross the road at mid-block crosswalks due to ease of access to their destination or the development of adjacent land-use types such as shopping, business areas, school, and residential areas. The behavior of pedestrians will change concerning different land-use types and this change in behavior of pedestrians further reflects the change in perceived level of service (LOS). So, it is important to evaluate the quality of service of such crossing facilities for different land-use types under mixed traffic conditions. In this framework, pedestrian perceived LOS were collected to different land-use types such as shopping, residential, and business areas. The ordered probit (OP) model was developed by using NLOGIT software package, with several vehicles encountered, road crossing difficulty as well as safety considered

as primary factors along with pedestrian individual factors (gender and age), land-use type and roadway geometry. From the model results, it has been concluded that perceived safety, crossing difficulty, land-use condition, number of vehicles encountered, median width, and number of lanes have a significant effect on pedestrian perceived LOS at unprotected (un-signalized) mid-block crosswalks in mixed traffic scenario. The inferences of these results highlight the importance of land use planning in designing a new set of pedestrian access facilities for unprotected mid-block crosswalks under mixed traffic conditions. Also, the study results would be useful for evaluating pedestrian accessibility taking into account different land-use types and planning required degree of segregation with vehicular movement at unprotected mid-block crosswalk locations (B Raghuram Kadali and P. Vedagiri 2016).

2.8 PLOS modeling in developing country

In developing countries, the rapid growth of population, economy, and urbanization leads to increased use of motor vehicles. Pedestrians and bicycles do not get the attention of researchers as compared with motor vehicles; however, it is important to consider the requirements of the non-motorized modes of transportation by the provision of suitably Designed walkways, sidewalks, crosswalks, and so forth. Pedestrian walkways can be used by pedestrians with disabilities and those in wheelchairs to move along or cross a roadway. To meet the requirements of all users, planners, designers, and policymakers must have a strong understanding of various factors that significantly affect various transportation facilities including pedestrian facilities. The sidewalk is a useful facility for pedestrians to move comfortably parallel to vehicle traffic. Sidewalks should be designed to cater to all users—children, elderly people, people with vision impairments, and Transportation people using wheelchairs and other assistive devices. Hence, selecting a suitable methodology for examining the existing pedestrian Facility or designing new facilities for diverse users and using a reliable LOS method is very important (Asadi-Shekari et al. 2013).

In developing countries, the policies (e.g., roadway design and traffic management) and fund investment aspects favor the motorized vehicle over non-motorized modes of transport such as pedestrians and bicycles. In recent years, there has been little attention and onus for reducing the risk of the roadway trip for non-motorized modes of transport. There is a need to provide the mobility and ease of access for non-motorized modes that create a sustainable transportation system. Moreover, accessibility should be further considered for diverse users such as persons with disabilities and wheelchair users. The design of such diverse user facilities under mixed traffic conditions is a complex task for traffic engineers and planners in developing countries. Usually, in developing countries, pedestrians share the vehicle lane because of the absence of sidewalks, and crossing the road at unprotected crosswalks because of roadside development and crossing because of nearness to the destination is difficult. Because of the mixed traffic, it is very rare to get an adequate gap at unprotected crosswalks and pedestrian behavior changes when they cross the road under mixed traffic conditions. In India, studies found that 60% of accidents related to pedestrians were in an urban area and of these, 85% were noted at midblock crossings; these statistics indicate high pedestrian-vehicle conflicts at such crosswalks. So it is necessary to

evaluate pedestrian facilities with reliable methods by considering various influencing factors. Further, the LOS is the most effective method to evaluate existing facilities with a reasonably measurable parameter such as the MOE. In this regard, successive editions of the Highway Capacity Manual (HCM) have been modified to introduce new factors such as freedom to maneuver, traffic interruptions, comfort, and convenience. In addition to these factors, it is necessary to explore the new factors that need to be considered for pedestrian LOS at unprotected crosswalk locations under mixed traffic conditions. In this study, the existing literature on LOS at various pedestrian facilities is synthesized by considering numerous variables as well as a methodology more focused on field studies (B Raghuram Kadali and P. Vedagiri 2016).

2.9 Summary

- From a previous study, PLOS is Assessing, describing existing conditions, and evaluating the overall Quality pedestrian facilities. The quality of sidewalks is normally assessed by Quality of Service (QoS) levels.
- From the literature Modeling of PLOS is used for the construction of new sidewalks and maintenance of existing sidewalks.
- Using pedestrian perception for modeling PLOS is a good approach to consider pedestrian needs rather than depend on experts' judgments.
- From the previous study safety, comfort, sidewalk width, surface condition of a walkway, and pedestrian crossing are the major factors of PLOS.

3. RESEARCH METHODOLOGY

The PLOS model proposed in this study developed by stepwise multiple regression analysis of combining quantitative as well as qualitative data, and the major steps involved in PLOS model development are listed below. The data collection from selected three sidewalks is discussed in detail. Information's about the identification of variables, correlation of variables, the definition of multiple regression analysis, and validation of the model are discussed next PLOS model development.

The development of the P-LOS model, the following main activities were engaged

- Identified relation of independent variables which affecting PLOS
- Identified relation of independent variables which affecting PLOS
- Developing a model for PLOS
- Defining limits of PLOS (A-F)
- Analysis PLOS for the study area by using the new model

3.1 Description of the study area

For this study, the selected areas are stars from Ashewa Meda to Holeta which is located Oromia Special Zones surrounding Addis Ababa on the new Ambo road. This areas are selected because of it is on highly developing in social, economic and on movement of pedestrian. Also in this area it seems that the poor condition of the pedestrian facilities, so this research aim to access and evaluate the level of service for the segment.

The study area includes the following Main Towns and villages:

- ASHEWA MEDA
- MENAGESHA
- HOLETA

Holeta Holeta is a town and separate wereda in central Ethiopia. Located in the Oromia Special Zone Surrounding Finfinne Oromia Region, it has a latitude and longitude of 9°3′N 38°30′E and an altitude of 2391 meters above sea level (Holeta Wikipedia n.d.)

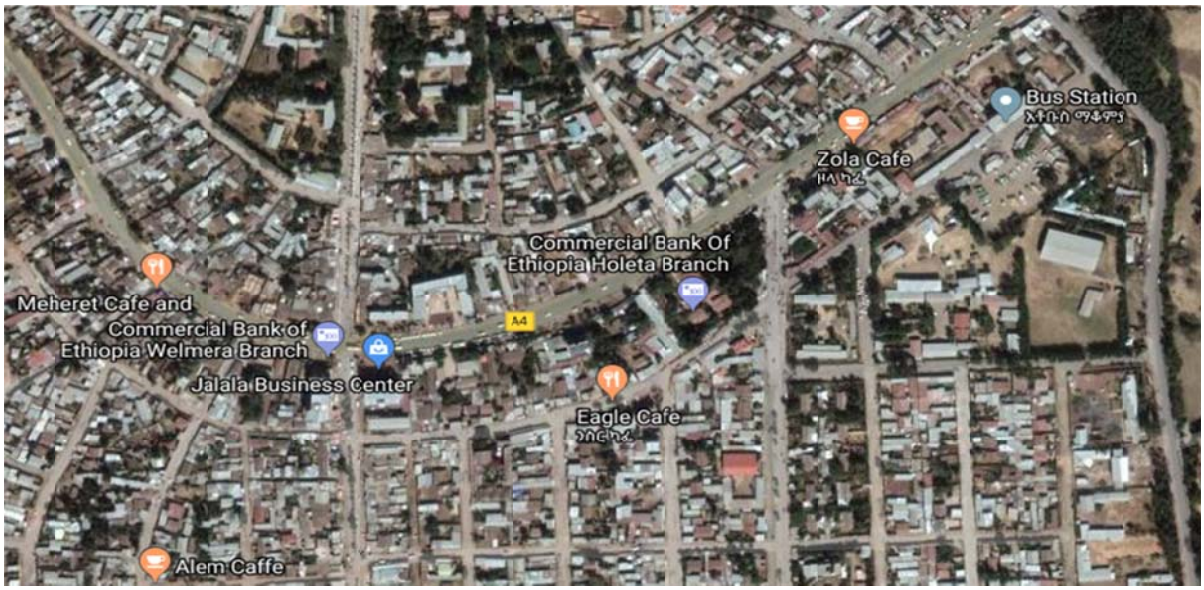


Figure 3-1 : Map of Holeta

Figure 3-2 : Condition of existing road Around Holeta

Menagesha town which is also located in the Oromia Special Zone Surrounding Finfinne of the Oromia Region before some KM arrive at Holeta and it has a latitude and longitude of 9°3′N 38°30′E and an altitude of 2391 meters above sea level. (Menagesha Wikipedia n.d.)

Figure 3-3 : Map of Menagesha

Figure 3-4 : Condition of existing road Around Menagesha

Ashewa Meda is located in Burayu wereda which is developed and expanded in consequence of the construction of the road which is going to Addis Ababa to Ambo. (Burayu Wikipedia n.d.)

Figure 3-5 : Map of Ashewa Meda

Figure 3-6 : Condition of existing road Around Ashewa Meda

3.2 Data Requirements

3.2.1 Data Type

The P-LOS model consisted of one dependent variable and five independent variables. P-LOS is the dependent variable and the independent variables are the width of the sidewalk, Lane width, Parking lane, buffer width comfort, and safety, crossing & surface condition of the walkway.

The data which is used in the study are Questioner data and field surveying data.

3.2.1.1 Questioners surveying

The following data are collected by using Questioners from pedestrian perception.

- **Sidewalk surface:** A smooth, leveled and slip resistant surface is preferred by pedestrians for walking as it is more comfortable and safe than a deteriorated one. Thus, a sidewalk with good surface condition will have better LOS than a sidewalk with poor surface condition. So pedestrian were asked to rate the surface condition of sidewalk.

- **Crossing opportunities**. Crossing facilities can protect or hurt pedestrians and bring convenience or obstruction to pedestrians, so the conditions of crossing facilities were believed to influence pedestrians' sense of safety and comfort. Crossing facilities factors include the waiting space, crossing distance, type of crossing markings, median type, and separate path for bicycles.

- **Comfort** Comfortable you feel while walking through the sidewalk, Space to avoid the obstruction without decelerating my pace, Move freely without any physical obstruction, obstruction and Cleanness of sidewalk

- **Safety** Easiness of movement in walking, Safety you feel while walking through the sidewalk, Feel safe from trips, slips and falls, safe from vehicle traffic danger and safe from vehicle traffic danger.

3.2.1.2 Field surveying data

- **Sidewalk width** Sidewalk width Sidewalks and walkways are pedestrian lanes that provide people with space to travel within the public right-of-way that is separated from roadway vehicles. Sidewalks are associated with significant reductions in pedestrian collisions with motor vehicles

3.2.2 Sample size

Sampling is a tool that is used to indicate how much data to collect and how often it should be collected. To determine the sample size for the questionnaire survey respondents, the population of pedestrians walking along the sidewalks is very large or unknown exactly. Hence, for a

population that is too large or not known precisely, the sample size (n) is determined using Equation below. The minimum sample size needed for an interval estimate of a proportion is calculated by (G.Bluman 2009).

$$\boldsymbol{n=pq(Z\alpha/2E)^2}$$

Where: n= Sample size,

p=sample proportion

q=1-p

Zα/2= z value, 95% of confidence interval

α=significance level,

E=margin of error or maximum error of the estimate, wish to be accurate within 3.5% of the true proportion

To get enough sample size it is determined the sample size with 95% confidence interval and 3.5% maximum error of the estimate. If some approximation of sample proportion (p) is known (e.g. from a previous study) that value can be used in the formula. Since there is no prior knowledge of sample proportion, statisticians assign the values
p= 0.5 and q= 0.5 P=0.5
q=1-p=0.5

Table 3-1 : Value of Zα/2 to different confidence

Confidence interval	Zα/2
90%	1.645
95%	1.96
99%	2.576
99.90%	3.291

α/2=1.96

Therefore:

$\boldsymbol{n=0.5*0.5*(1.96/0}.035)^2$ =784.16 we can take 785

The minimum calculated sample size of the study is 785.however for getting more 1000 questioners was distributed and from this questioner 876 are returned to back.

3.3 Research Design

Many activities were engaged to address the objective of the research and to answer the question of the study. A lot of literature was reviewed to identify factors of the Pedestrian level of service on the sidewalk and then identify which factors are more influenced by the study area. Safety, Comfort sidewalk width, Zebra crossing, and surface condition of the road was more influenced factors and selected for the analysis.

3.2.3 Data collection

Roadway conditions of the road were collected with a field survey and pedestrian perceptions score was collected through a questionnaire survey on the area of Ashewa meda, Menagesha, and Holeta.

Questionnaire survey

Questionnaires were administered by personnel on both weekends and working days on sidewalks. A questionnaire was designed to understand the pedestrian perspectives about sidewalks they are using according to safety & comfort. The questionnaire includes:

- pedestrian profile such as age & gender
- about trip characteristics like purpose, trip frequency, trip distance,
- surface condition of the walkway,
- crossing opportunity
- Safety and comfort of walking environment etc.
- PLOS (Pedestrian Level of Service) general level of the sidewalk

In the questionnaire survey, the pedestrians were asked to rate their overall Satisfaction about the sidewalk's facilities. The dependent and independent variables except for the width of the walkway was Score obtained through questionnaires. Pedestrians were asked to rate each variable in terms of Excellent to V.poor (1.Excellent 2. V.good 3. Good 4. Fair 5. Poor 6.V.poor)

The overall satisfaction levels of the sidewalk (PLOS) which is filled by the pedestrians were considered as the dependent variables for the analysis. This rating of satisfaction depended on The 2010 Highway Capacity Manual (HCM) includes methodologies for calculating the Pedestrian Level of Service (PLOS) as part of the "Multimodal LOS" analysis. The methodology provides a model for calculating a letter grade scaled from "A" to "F" that represents pedestrians' perceptions of safety and comfort.

Numerical LOS Score	Letter Grade
<1.5	A
>1.5 and <2.5	B
>2.5 and <3.5	C
>3.5 and <4.5	D
>4.5 and <5.5	E
>5.5	F

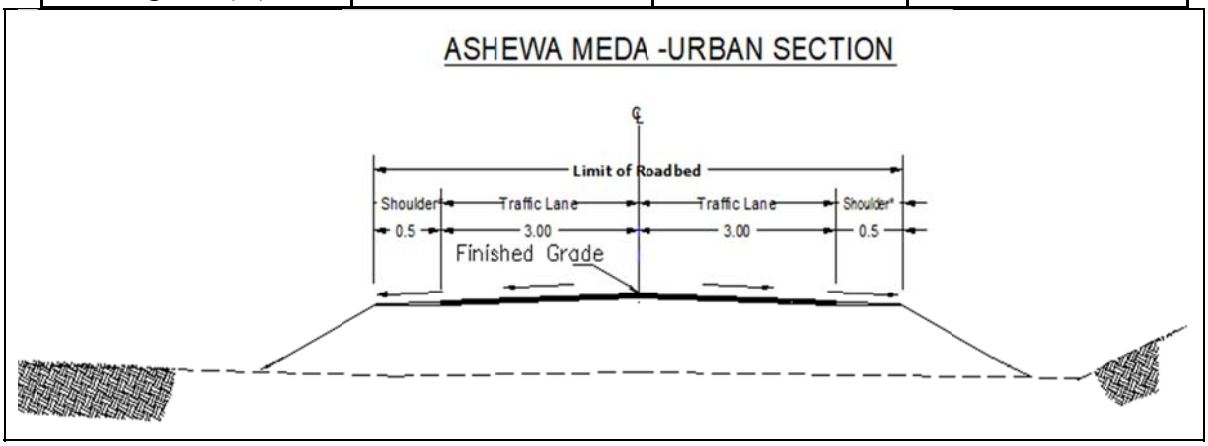
Source: HCM 2010

Field surveying

A field investigation was engaged to check the geometric elements of the road. The presence of sidewalk and width of the sidewalk was investigated from the site, as per the result from 1.5 m to 2.5m width sidewalk were listed. All the road cross-section elements are shown below by table and figure.

Table 3-2 : Sidewalk width of the study area

Geometric parameters	Ashewameda	Menagesha	Holeta
Sidewalk width(m)	1.5 (Gravel)	2.5 (including covered ditch)	2.5 (including covered ditch)
Lane width(m)	3.5	3.5	3.5
Parking lane(m)	0.0	2.5	2.5



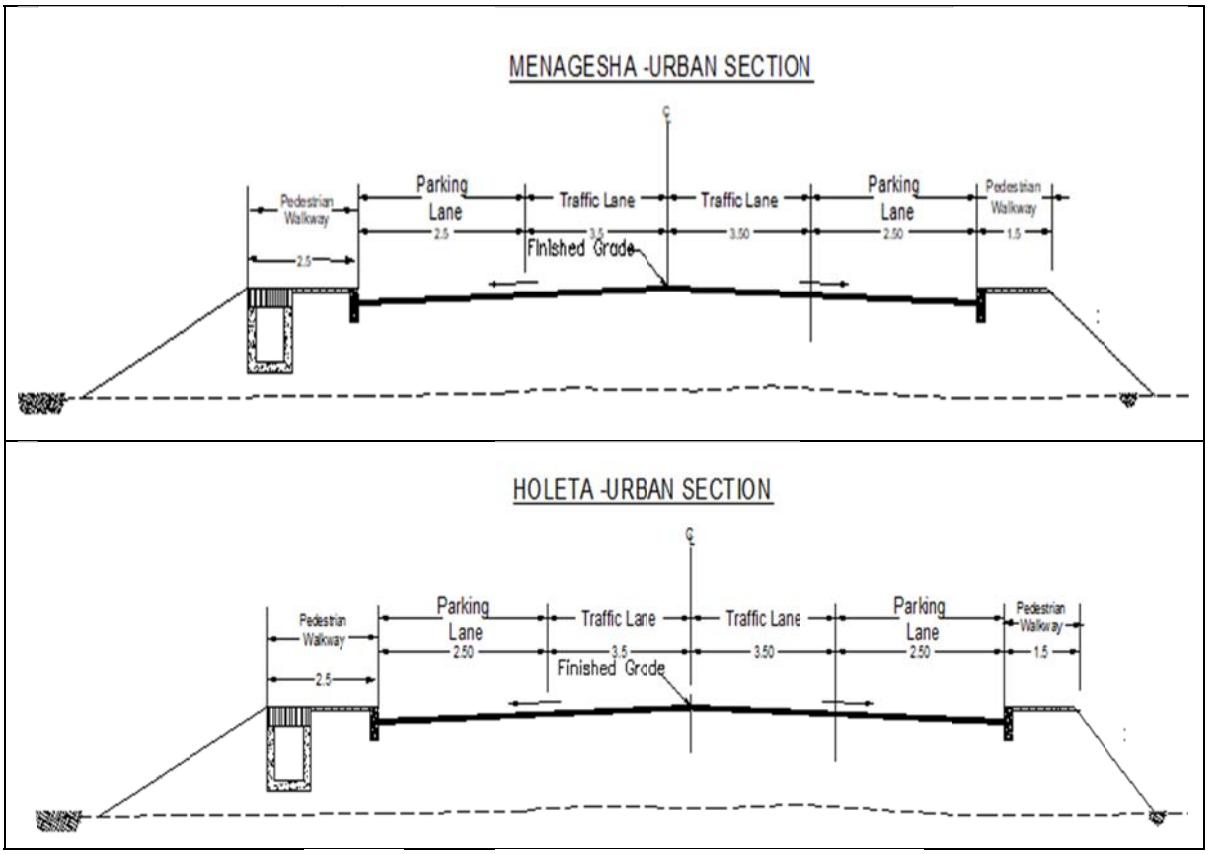


Figure 3-7 : Cross sectional views of roadway

3.2.4 Data Analyzing and Out put

3.2.4.1 Ordered logit model

The ordered logit model is a regression model for an ordinal response variable. The model is based on the cumulative probabilities of the response variable: in particular, the logit of each cumulative probability is assumed to be a linear function of the covariates with regression coefficients constant across response categories. Questions relating to satisfaction with life assessment and expectations are usually ordinal in nature. For the study, the answer to the 6 being very poor., When the response variable of interest is ordinal, it is advisable to use a specific model such as the ordered logit model. Let Yi be an ordinal response variable with C categories for the i-th subject, alongside with a vector of covariates xi. A regression model establishes a relationship between the covariates and the set of probabilities of the categories

pci=Pr(Yi =yc| xi), c=1,…,C.

Usually, regression models for ordinal responses are not expressed in terms of probabilities of the categories, but they refer to convenient one-to-one transformations, such as the cumulative probabilities

gci=Pr(Yi ≤yc| xi), c=1,…,C.

So the model specifies only C−1 cumulative probabilities. An ordered logit model for an ordinal response Yi with C categories is defined by a set of C−1 equations where the cumulative probabilities

gci=Pr(Yi ≤yc| xi) are related to a linear predictor

β'xi = β0+β1x1i+β2x2i+… through the logit function:

logit (gci) = log(gci /(1− gci)) = αc − β'xi , c = 1,2,…,C−1. (1)

The parameters αc, called thresholds or cut points, are in increasing order (α1 < α2 < … It is not possible to simultaneously estimate the overall intercept β0 and all the C−1 thresholds: in fact, adding an arbitrary constant to the overall intercept β0 can be counteracted by adding the same constant to each threshold αc. This identification problem is usually solved by either omitting the overall constant from the linear predictor (i.e. β0 = 0) or fixing the first threshold to zero (i.e. α1= 0).

The interpretation of the effects of the covariates is reversed. From equation (1),

The cumulative probability for category c is

gci = exp(αc − β'xi)/(1+exp(αc − β'xi)) = 1/(1+exp(−αc + β'xi))…… (2)

The overall predicted PLOS score (PLOS) for a roadway segment is nothing but the sum of probabilities obtained for individual 'y' values (y = 1, 2… or 6). The mathematical expression for the same is as follows:

$$\text{PLOS} = \sum_{j=0}^{6} p(y = j)$$

Where $p(y = j)$=1/ (1+exp-(αc + β'xi))

$$\mathbf{P(PLOS\ y = j)} = \mathbf{1/1+\ e^{(-uj+0.62Comfort+0.11Safety+0.498surface\ condition+0.649zebra\ crossing-1.308width)}}$$

3.2.4.2 Model evaluation criteria

Pseudo-R^2: It is known that models derived using OLS procedure use coefficient of determination (R^2) as a measure of 'goodness-of-fit.' A pseudo-R^2 compares the likelihood for the intercept-only model to the likelihood for the model with predictors, and returns an indication on the strength of

the model. Values of pseudo-R^2's can be as low as zero but can never equal one, and a higher value of these parameters indicates a better-fitted model.

Table 3-3 : Variable description.

Variables	Measure	Description
General condition of the sidewalk **(PLOS)**	ordinal	1. Excellent 2. V.good 3. Good 4. Fair 5. Poor 6.V.poor
Sidewalk width	Scalar	The width of selected sidewalks and measured by a calibrated measuring tape. (expressed as m)
safety	ordinal	1. Excellent 2. V.good 3. Good 4. Fair 5. Poor 6.V.poor
comfort	ordinal	1. Excellent 2. V.good 3. Good 4. Fair 5. Poor 6.V.poor
Sidewalk surface condition	ordinal	1. Excellent 2. V.good 3. Good 4. Fair 5. Poor 6.V.poor
Zebra crossing	ordinal	1. Excellent 2. V.good 3. Good 4. Fair 5. Poor 6.V.poor
Length	ordinal	1) Less than 500m 2) 500-1000m 3) 1000-2000m 4) greater than 2000
Purpose	ordinal	1) Go to/from work 2) Go to/from school 3) Shopping 4) Recreational 5) Visiting friends/family 6) Others
Time	ordinal	1) Morning 2) afternoon 3) evening
Frequency	ordinal	1) Everyday 2) 2-3 times a week 3) Once a week 4) Sometimes

The data is collected from the questioner and field surveying insert to SPSS with all the necessary steps. It is shown below with some data as an example, for understanding how the data was used in the software and the whole data is attached to the annex.

Table 3-4 : Sample of data how to it inset to SPSS

Id	Age	Gender	Job	Frequency	Purpose	Length	Time	Comfort	Safety	Surface Condition	Zebra Crossing	PLOS	Side walk width
1	2	2	1	1	1	1	1	3	3	4	4	4	2.5
2	2	2	2	1	1	3	1	3	3	4	4	3	2.5
3	2	2	1	1	1	3	4	3	3	4	5	4	2.5
4	2	2	2	2	1	2	1	3	3	3	3	3	2.5
5	2	2	2	4	4	4	4	6	5	5	5	5	2.5
6	2	2	2	1	1	3	2	3	3	4	3	4	2.5
7	2	2	4	4	2	4	3	3	2	5	6	6	2.5
8	2	2	1	2	1	4	4	6	6	6	5	6	2.5
9	2	2	1	1	1	4	1	5	5	5	6	5	2.5
10	2	2	1	1	1	4	1	3	3	4	6	5	2.5
11	2	2	1	1	1	3	1	6	6	6	6	6	2.5
12	2	2	1	1	1	4	4	4	5	6	6	6	2.5
13	2	1	3	4	3	4	4	4	5	5	5	5	2.5
14	2	2	1	1	1	4	4	4	5	6	6	5	2.5
15	2	2	4	1	2	4	4	4	5	6	6	5	2.5

With the best fit model, evaluate the study area of PLOS by taking average values of the independent factor which is collected from questioners for each study area and calculated it with the developed model and evaluate each study area.

3.2.4.1 Define the limits of pedestrian LOS (A - F)

As is known many kinds of literature defined that the minimum value of LOS identifies a good level and the one maximum is for poor services. Therefore by using the developed model with maximum and minimum values of the independent parameters it is defined the highest and least values of the pedestrian level of service.

3.2.4.4 Analysis PLOS for the study area with new model

By using the new model PLOS for the study area was analyzed. Using the independent factors average value and insert it on the new model equation the study area was analyzed.

4. RESULTS AND DISCUSSION

The analysis was with the collected data for the study areas SPSS following the proper and best method. The results are presented in the following sections with a brief explanation.

4.1 Questionnaire Responses

1000 questioners were distributed for the pedestrian who is much familiar with that sidewalk and 876 were returned to the back. This survey also collects data about the pedestrian perception of the quality of pedestrian facilities related to the walkway. Since perceptions of the individual pedestrian about various factors that affect the PLOS of the walkway are different from others due to variation in gender, age, nature, etc. Each was asked to give their rating for different pedestrian facilities from 1 to 6.

Ratings of four independent and the dependent factors were asked to the pedestrian for giving their rating. Meaning and a full explanation of these factors have given on the questioner to the pedestrian for easily understanding and rating their satisfaction. For a better understanding of respondents, the questioner paper was prepared in three languages which are English, Amharic, and Affan oromic. Correspondingly respondents were given enough time to answer.

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Table 4-1 Respondent gender

		Total No	Percentage (%)
Gender	Female	404	46.12
	Male	472	53.61

The table above indicates that a percentage of male participants (53.61%) few greater than female participants (46.12%).

The Figures below indicate that the questioner respondent perception related to the existing condition and level of service for sidewalks.

For the question Feel Comfortable while walking through the sidewalk, the answer gotten from the result of the pedestrian perception is 64 % fall from fair to V.poor. 23.0 % is good, 13% V.good and no excellent response.

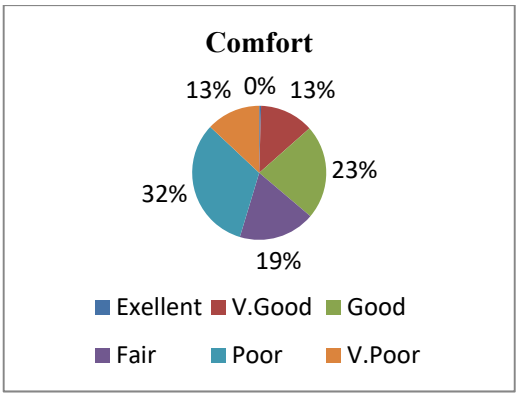

Figure 4-1: Respondent's Perceptions about comfort

From the question safety, you feel while walking through walkway the response acquired from the result of the pedestrian perception is 71% fall from fair to v.poor.29% is V.good and good no excellent response.

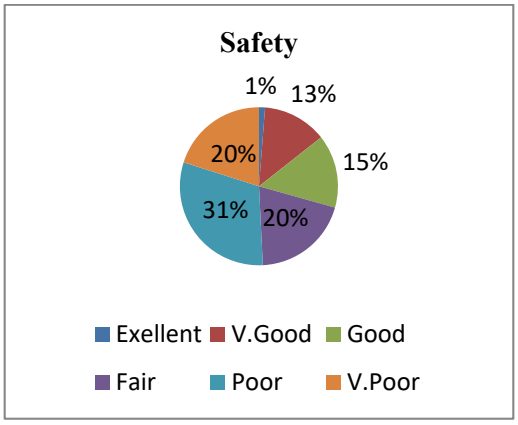

Figure 4-2: Respondent's Perceptions about: safety

For the Crosswalk Surface Condition, the response from the result of the pedestrian perception is 79 % fall from fair to v.poor.21% is V. good and good no excellent response.

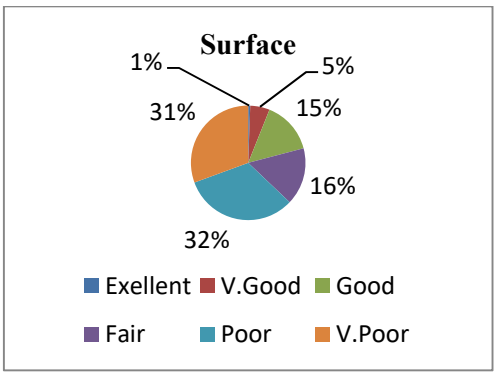

Figure 4-3: Respondent's Perceptions on surface condition

For request rate Crossing Facilities the response from the result of the pedestrian perception is 71 % fall from fair to v.poor.29% is V.good and good no excellent response.

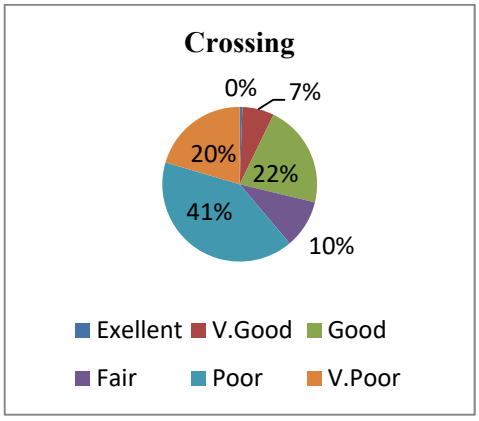

Figure 4-4: Respondent's Perceptions on crossing facility

For the general road condition and PLOS the response from the result of the pedestrian perception is 77% fall from fair to V.poor 23% is V.good and good no excellent response.

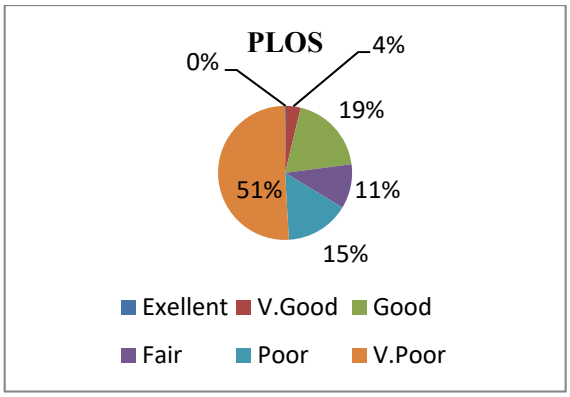

Figure 4-5: Respondent's Perceptions about on PLOS

From the questioner data, the parameters which are requested to rate by the pedestrian are more than 70 % falls from fair to very poor. This implies that most of the parameters have effects on pedestrians' walking environment.

4.2. Result Analysis and Discussion

A stepwise regression analysis takes place using SPSS software fitting Y (PLOS) and (X1, X2, X3, X4, X5). The introducing order for independent variables to the line equation is successively X1: Zebra crossing, X2: Width, X3: surface, X4: Comfort, and X5: Safety and the results are as follows.

4.2.1 Correlation and significant factors

The results of correlation analysis from SPSS are shown in the table below which expresses that the statistical relationship between two variables. A correlation could be positive that shows the variables move in the same direction or negative meaning that when one variable upturn and the other variables' values decline. Correlation can also be neutral or zero, meaning that the variables are unrelated. When Pearson Correlation near to +1 or -1 it is a perfect correlation and lies between ± 0.5 to ±1 it is said strong correlation. For Pearson Correlation ±0.3 to ± 0.49, it is a moderate correlation, and if less than ± 0.29 it is a low degree correlation.

Table 4-2 : Correlation of variables

		PLOS	Zebra crossing	Safety	Comfort	Width	Surface
Pearson Correlation	**PLOS**	1.000	0.829	0.641	0.730	-0.605	0.766
	Zebra crossing	0.829	1.000	0.594	0.710	-0.465	0.733
	Safety	0.641	0.594	1.000	0.637	-0.688	0.546
	Comfort	0.730	0.710	0.637	1.000	-0.577	0.715
	Width	-0.605	-0.465	-0.688	-0.577	1.000	-0.523
	Surface	0.766	0.733	0.546	0.715	-0.523	1.000

- Seen from the Pearson correlation test all the parameters are fall from+/- 0.5 to +/-1. Therefore the parameters are strongly correlated with the dependent parameter.

4.2.2 Cronbach's alpha

Formally speaking, the Cronbach's alpha is a measure of internal consistency; how closely related a number of items are as a group. The coefficient ranges between 0 and 1. A high alpha value indicates that items measure an underlying factor. However, it is not a statistical test but a test of reliability. One important thing to note is that the Cronbach's alpha is affected by the number of variables :(Almquist, Ashir & Brännström)

Alpha values	**Remarks**
Between 0.7 and 1.0	Acceptable
Below 0.7	Not Acceptable

The Cronbach's Alpha for the study is shown below which indicate that the factors which in the study analysis are reliable.

Reliability Statistics

Cronbach's Alpha	**N of Items**
.716	6

4.2.2 Ordered logit model

These are the estimated multivariate logistic regression coefficients for the models. An important feature of the multinomial logit model is that it estimates *k-1* models, where *k* is the number of levels of the outcome variable.

4.2.2.1 Multivariate analysis

At multivariate analyses is shown below on table 4.3, the column estimate show that how much changes on PLOS with the selection of each rate of parameters by pedestrian from excellent to V.poor. The negative sign show that the decrease of PLOS and the positive one is for the increase of PLOS.

Table 4-3 Multivariate Parameter Estimates

			Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval	
								Lower Bound	Upper Bound
Threshold		[General condition of road = 1]	-3.776	1.901	394.693	1	.000	-41.487	-34.036
		[General condition of road = 2]	-3.341	1.549	464.899	1	.000	-36.443	-30.370
		[General condition of road = 3]	-2.842	1.462	377.751	1	.000	-31.290	-25.557
		[General condition of road = 4]	-2.576	1.424	327.077	1	.000	-28.551	-22.968
		[General condition of road = 5]	-2.255	1.372	270.105	1	.000	-25.238	-19.860
Location	Widthofsidewalk	[Width of sidewalk=0.50]	1.160	.511	5.147	1	.023	.158	2.163
		[Width of sidewalk=2.50]	0[a]			0			
	Crossing	[Crossing=1 , Excellent]	-5.631	1.179	22.804	1	.000	-7.942	-3.320
		[Crossing=2, V.good])	-8.349	.691	145.849	1	.000	-9.704	-6.994
		[Crossing=3, Good]	-5.021	.504	99.365	1	.000	-6.008	-4.034
		[Crossing=4, Fair]	-3.781	.483	61.402	1	.000	-4.727	-2.835
		[Crossing=5, Poor]	-1.256	.353	12.659	1	.000	-1.948	-.564
		[Crossing=6] V.poor	0[a]			0			
	Surfacecondition	[Surface condition=1, Excellent]	-2.339	1.221	46.656	1	.000	-10.731	-5.946
		[Surface condition=2, V.good]	-1.971	.570	27.176	1	.000	-4.088	-1.854
		[Surface condition=3, Good]	0.669	.477	31.292	1	.000	-3.604	-1.734
		[Surface condition=4, Fair]	1.565	.435	12.940	1	.000	-2.418	-.712

			Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval	
								Lower Bound	Upper Bound
		[Surface condition=5, Poor]	1.829	.333	6.179	1	.013	-1.482	-.175
		[Surface condition=6, V.poor]	0[a]			0			
	[Safety you feel while walking	[Safety you feel while walking=1, Excellent]	-5.076	1.185	18.352	1	.000	-7.398	-2.754
		[Safety you feel while walking=2, V.good]	-0.4595	.961	22.841	1	.000	-6.479	-2.710
		[Safety you feel while walking=3, Good]	.0.5037	.961	27.475	1	.000	-6.920	-3.153
		[Safety you feel while walking=4, Fair]	-4.248	.947	20.118	1	.000	-6.104	-2.392
		[Safety you feel while walking=5, Poor]	-3.806	.893	18.182	1	.000	-5.556	-2.057
		[Safety you feel while walking=6, V.poor]	0[a]			0			
	Comfort you feel while walking	[Comfort you feel while walking=1 Excellent]	-.452	1.417	.102	1	.750	-2.326	3.230
		[Comfort you feel while walking=2. V good]	-.971	.948	1.049	1	.306	-2.829	.887
		[Comfort you feel while walking=3, Good]	-1.599	.917	3.038	1	.081	-3.396	.199
		[Comfort you feel while walking=4, Fair]	.104	.883	.014	1	.906	-1.835	1.627

			Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval	
								Lower Bound	Upper Bound
		[Comfort you feel while walking=5 , Poor]	1.275	.854	2.231	1	.135	-2.948	.398
		[Comfort you feel while walking=6, V.poor]	0[a]			0			
	Length	[Length=1, Less than 500m]	1.682	.442	14.458	1	.000	.815	2.549
		[Length=2 ,500-1000m]	1.250	.331	14.229	1	.000	.600	1.899
		[Length=3 , 1000-2000m]	.561	.294	3.629	1	.057	-.016	1.138
		[Length=4 , greater than 2000]	0[a]			0			
	Purpose	[Purpose=1, Go to/from work	-1.697	.486	1219.474	1	.000	-17.920	-16.016
		[Purpose= 2, Go to/from school	-1.850	.539	1178.295	1	.000	-19.562	-17.448
		[Purpose=3, Shopping	-1.631	.505	1042.325	1	.000	-17.302	-15.321
		[Purpose=4 , Recreational	-1.412	0.000		1		-14.120	-14.120
		[Purpose=5 ,Visiting friends/family	0[a]			0			
	Frequency	[Frequency=1,Everyday]	1.080	.513	4.427	1	.035	.074	2.087
		[Frequency=2, 2-3 times a week]	.524	.528	.982	1	.322	-.512	1.560
		[Frequency=3 ,Once a week 4]	-.042	.947	.002	1	.964	-1.899	1.814
		[Frequency=4 Sometimes]	0[a]			0			

			Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval	
								Lower Bound	Upper Bound
	Time	[Time=1] 1) Morning	-.644	.334	3.717	1	.054	-1.299	.011
		[Time=2] 2) afternoon	2.186	.675	10.486	1	.001	.863	3.508
		[Time=3] 3) evening r	-1.654	.370	19.970	1	.000	-2.380	-.929

Link function: Logit.

4.2.2.2 Ordered Logit Model

The results of the ordered logit analysis for the independent variables are presented in Table below. The table shows that the coefficient estimates are associated with negligible standard errors. Thus, the coefficients estimates are able to provide balanced results. The table also shows that, all important attributes are significantly (p\0.05) contributing to the model at the 95% confidence level.

Table 4-4 General independent factors Parameter Estimates

		Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Threshold	[General condition of road = 1]	-2.570	1.175	4.782	1	.029	-4.874	-.266
	[General condition of road = 2]	1.560	.719	4.711	1	.030	.151	2.969
	[General condition of road = 3]	5.410	.750	52.073	1	.000	3.941	6.880
	[General condition of road = 4]	7.643	.814	88.070	1	.000	6.047	9.240
	[General condition of road = 5]	9.408	.889	137.050	1	.000	8.665	12.150
Location	Frequency	.093	.128	.531	1	.046	-.158	.345
	Purpose	.182	.094	3.794	1	.050	-.001	.366
	Length	-1.741	.116	92.387	1	.000	-1.341	-.887
	Time	.041	.079	.272	1	.002	-.114	.197
	Comfort you feel while walking	.387	.120	10.443	1	.001	.152	.622
	Safety you feel while walking	.344	.094	13.248	1	.000	.159	.528
	Surface condition	.768	.109	50.021	1	.000	.555	.981
	Crossing	1.450	.127	170.385	1	.000	1.405	1.902
	Width of sidewalk	-1.280	.153	44.037	1	.000	-1.319	-.717

Link function: Logit.

By applying the parameters estimated through ordered logit analysis to the vector of independent variables, we obtain the following model

The overall predicted PLOS score (PLOS) for a roadway segment is nothing but the sum of probabilities obtained for individual ‘y’ values (y = 1, 2… or 6.The mathematical expression for the same is as follows:

$$\text{PLOS} = \sum_{j=0}^{5} p(y = j)\,,$$

Where P(y=j) = **P(Y<=j=) =1/1+ e-^{zj}**

P(PLOS y = j) =1/1+ e $^{(-uj+0.38Comfort+0.344Safety+0.768surface\ condition+1.450zebra\ crossing-1.741 length+0.182purpose+0.041time+0.093frequancy-1.308width)}$

Where uj is the Threshold, u_1=--2.570, u_2=1.560, u_3=5.410, u_4 =7.643, and u_5=9.408,

Also the model can be expressed as follow

PLOS =0.38**Comfort**+0.344**Safety**+0.768**Surface condition**+1.450**Zebra crossing**-1.741 L**ength**+0.182**Purpose**+0.041**Time**+0.093**frequancy**-1.308**width**

Model evaluation criteria

Pseudo-R^2: It is known that models derived using OLS procedure use coefficient of determination (R^2) as a measure of 'goodness-of-fit. A pseudo-R^2 value of the study is 78%.

4.2.4 Define the limits of pedestrian LOS (A - F)

Using the developed model defined the highest and least values of the pedestrian level of service.

Table 4-5 Maximum and Minimum values of the independent variable

	Comfort	Safety	Surface	Crossing	Width of sidewalk
Min	1	1	1	1	0.5
Max	6	6	6	6	2.5

PLOS =0.38**Comfort**+0.344**Safety**+0.768**Surface condition**+1.450**Zebra crossing**-1.741 L**ength**+0.182**Purpose**+0.041**Time**+0.093**frequancy**-1.308**width**

PLOS $_{max}$ =5.6

PLOS $_{min}$ =1.5

The ranges of the pedestrian level of service (PLOS) for the model are falling between 1.5 and 5.6, It the same as the HCM 2010 manual.

Table 4-6 : PLOS range verses with letter for the new model

Numerical LOS Score	Letter Grade
<1.5	A
1.5 – 2.5	B
2.5– 3.5	C
3 .5–4.5	D
4.5-5.5	E
>5.5	F

4.2.5 Analysis PLOS for the study area with new model

By using the new model PLOS for the study area was analyzed. The typical values of the factor for each area are listed below:

Table 4-7 : Typical pedestrian perception of independent factor from the study area

	Study area		
Dependent variable	**Holeta**	**Menagesha**	**Ashewa meda**
Frequency	1.53	1.49	1.60
Purpose	1.87	1.37	2.05
Length	3.00	3.40	4.00
Time	2.20	2.61	2.01
Comfort	3.83	3.51	4.98
Safety	3.85	3.57	4.85
Surface condition	4.13	4.39	4.11
Crossing	4.00	4.53	4.28
Width of sidewalk	2.50	2.50	0.50
	Typical perception result of the independent variables		

PLOS =0.38**Comfort**+0.344**Safety**+0.768**Surface condition**+1.450**Zebra crossing**-1.741 L**ength**+0.182**Purpose**+0.041**Time**+0.093**frequancy**-1.308**width**

PLOS (Ashewa meda) = 6.23

PLOS (Menagesha) = 3.96

PLOS (Holeta) = 4.3

The following table shows that the level of service for each town by using the developed rating of the service.

Table 4-8: PLOS Score for the study area according to new model

Location	**PLOS score**	**PLOS**
Holeta	4.3	D
Menagesh	3.96	D
Ashewameda	6.23	F

The pedestrian level of service for Holeta and Menagesha fall on level "D" and Ashewa meda is on level "F".

5. CONCLUSION AND RECOMMENDATION

5.1 Conclusion

This study was carried out on developing a model for the pedestrian level of service. The data was analyzed by using SPSS with Ordered Logit model method and the LOS score table was obtained by determining the ranges for each level of service A to F. The study developed a method to assess PLOS of sidewalks for three different towns from surrounding Finfine special zone. After analyzing the data we arrive at the following conclusions:

▪ Developed Model which can be used to determine the level of service for the sidewalk on the selected section, the model is in the form of the following equation:

$$P(\text{PLOS } y = j) = 1/1 + e^{(-uj+0.38\text{Comfort}+0.344\text{Safety}+0.768\text{surface condition}+1.450\text{zebra crossing}-1.741\text{ length}+0.182\text{purpose}+0.041\text{time}+0.093\text{frequancy}-1.308\text{width})}$$

Where uj is the Threshold, u_1=--2.570, u_2=1.560, u_3=5.410, u_4 =7.643, and

u_5=9.408,

$$\text{PLOS} = \sum_{j=0}^{5} p(y = j)\,,$$

▪ From the model, all the parameters have to be considered during the new design road and used for the improvement of the existing road. Sidewalk, Zebra crossing, surface condition of the walkway, comfort, and safety has influences on PLOS.

▪ Since the investigation result, it shows that PLOS for Holeta and Menagesha fall in the range of "D" and Ashewa meda is on" F''.

▪ Pedestrian LOS model for sidewalk provides a measure of a sidewalk's performance concerning pedestrians' needs.

▪ Using the value of pedestrian LOS on the sidewalk, roadway designers can determine how in good condition of the sidewalk.

▪ Pedestrian LOS models could also be used to support the development of pedestrian facility improvements.

▪ Roadway designers can use the pedestrian LOS model to test alternative designs for sidewalk through cooperating with roadway by iteratively changing the independent variables to find the best combination of factors to achieve the desired LOS.

5.2 Recommendation

To further improve the results of this study the following recommendations are formulated:

- By using further data ERA manual should incorporate the design standard for pedestrian facilities which is specific for design areas such as considering; forecasting population, land use, roadside development, Crosswalks, and pedestrian markings.
- As per roadway maintenance period it is better to include and plan for pedestrian sidewalks and facilities.
- Improve the condition of the sidewalk for safety & comfort such as street lighting, surface condition, and zebra crossing, etc.
- From the analysis result, it shows that PLOS for Holeta and Menagesha fall in the range of "D" and Ashewa meda is on" F". Therefore, the Wereda administration should consider this issue and aim to improve pedestrian facilities.
- Further research should be conducted to extend all aspects of this research, by collecting more data to improve results.

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7 APPENDIX

Questioner

ADDIS ABABA UNIVERSTY

SCHOOL OF CIVIL AND ENVIROMENTAL ENGINEERING

A questionnaire to be filled by different participants

1.What is Your age

1) Under 13 2) 13- 49 3) above 49

2.What is gender

1) Female 2) male

3.What is Your job

1) Government/ private office 2) your own business 3) housewife 4) student

4.Did you used walking

1) Yes 2) no

5.How often did you walk?

1) Everyday 2) 2-3 times a week 3) Once a week 4) Sometimes

6.What is your purpose of walking

1) Go to/from work 2) Go to/from school 3) Shopping 4) Recreational 5) Visiting friends/family 6) Others

7. How length did you walk?

1) Less than 500m 2) 500-1000m 3) 1000-2000m 4) greater than 2000

8.In what time you always walk

1) Morning 2) afternoon 3) evening 4) other

COMFORT

9.Comfortable you Feel while walking through the sidewalk , Space to avoid the obstruction without decelerating my pace, Move freely without any physical obstruction , obstruction from vendors and Cleanness of sidewalk

1) Excellent 2) V.good 3) Good 4) Fair 5) Poor 6) V.poor

SAFTY

10. Safety you feel while walking through the sidewalk, Feel safe from trip, slips and falls, safe from vehicle traffic danger and safe from vehicle traffic danger.

1) Excellent 2) V.good 3) Good 4) Fair 5) Poor 6) V.poor

Crosswalk Surface Condition

11. surface for walking smooth, leveled and slip resistant ,comfortable and safe

1) Excellent 2) V.good 3) Good 4) Fair 5) Poor 6) V.poor

Crossing opportunities

12. Crossing Facilities include the waiting space, crossing distance, type of crossing markings, median type, and separate path for bicycle

1) Excellent 2) V.good3) Good 4) Fair 5) Poor 6) V.poor

PLOS

13. The road condition on choose walking speed freely , the total width of sidewalk is wide enough ,overtake other pedestrians easily , view the bus stop clearly & The sight distance to bus stop is adequate

1) Excellent 2) V.good 3) Good 4) Fair 5) Poor 6) V.poor

ADDIS ABABA UNIVERSTY

አዲስ አበባ ዩንቨርሲቲ

SCHOOL OF CIVIL AND ENVIROMENTAL ENGINEERING

A questionnaire to be filled by different participants

አጠቃላይ መረጃ

1. እድሜ

1) ከ 13 አመት በታች 2) 13-49 3) ከ49 በላይ

2. ፆታ

1) ሴት 2) ወንድ

3. ስራ

1) የመንግስት / የግል ቢሮ 2) የራስዎ ቢዝነስ 3) የቤት እመቤት 4) ተማሪ

4. የእግር መንገድ ይጠቀማሉ

1) አዎ 2) አይ

5. በምን ያህል ጊዜ የእግር መንገድ ይጠቀማሉ

1 ሁልጊዜ 2) በሳምንት 2-3 ጊዜ 3) በሳምንት 1 ጊዜ 4) አልፎ አልፎ

6. ወዴት ለምሄድ እግር መንገድ ይጠቀማሉ

1) ወደ ስራ 2) ወደ ትምህርት ቤት 3) ወደ ገበያ 4) ለመዝናናት

7. ምን ያህል ርቀት ይገዛሉ

1) ከ500 ሜ በታች 2) ከ500-1000 ሜ 3) ከ1000-2000 ሜ 4) ከ 2000 ሜ በላይ

8. የእግር መንገድ በየትኛው ጊዜ ይጠቀማሉ

1) ጠዋት 2) ከሰአት 3) ማታ

የእግረኛ መንገድ ምቾት

9. በእግረኛ መንገድ ላይ ሲገዙ ምቾት አለው፤ካለምንም መሰናክል ይገዛሉ የቆመ ነገር ወይም ለመሄድ እሚያሰቸግር ነግር አለ፤የእግረኛ መንገዱ ፅዱ እና ምቹ ነው

1) እጅግ በጣም ጥሩ 2) በጣም ጥሩ 3) ጥሩ 4) ምንም አይልም 5) ዝቅተኛ 6)በጣም ዝቅተኛ

የእግረኛ መንገድ ደህንነት

10. በእግረኛመንገድ ላይ ሲገዙ ደህንነትዎ ተጠብቆ በጥሩ እና በተረጋጋ ስሜት ይገዛሉ ፣መንገዱ አያደነቃቅፍም ፤ለትራፈክ አደጋ አይሰጡም

1) እጅግ በጣም ጥሩ 2) በጣም ጥሩ 3) ጥሩ 4) ምንም አይልም 5) ዝቅተኛ 6) በጣም ዝቅተኛ

የእግረኛ መንገድ ሁኔታ

11. የእግረኛ መንገድ ልባሱ ምቹ እና የተስተካከለነው

1) እጅግ በጣም ጥሩ 2) በጣም ጥሩ 3) ጥሩ 4) ምንም አይልም 5) ዝቅተኛ 6) በጣም ዝቅተኛ

የእግረኛ ማቆረጫ ሁኔታ

12. የመንገድ ማቆረጫው ቆሞ መኪና ማሳለፊያ አለው ፤እሚየቀርቱት መንገድ እርቀት፤የመሻገሪያ ምልክቶች (ዜብራ መንገድ)

1) እጅግ በጣም ጥሩ 2) በጣም ጥሩ 3) ጥሩ 4) ምንም አይልም 5) ዝቅተኛ 6) በጣም ዝቅተኛ

የእግረኛ መንገዱ እግረኛውን የማስተናገድ አቅም

13. የእግረኛ መንገዱ በፈለጉት ፈጥነት እንዲገዙ ያስችላል ፤ የእግረኛ መንገዱ ስፋት ከፊት ያለውን ሰው በቀላሉ እንዲያልፉ እና በቀላሉ እነዲገዙ የስችላል ፤ ወደታክሲ/አውቶቢስ መቆሚያ በቀላሉ ለማየት ያስችላል፣ሲጉዙ ምቾት አለው፣ደንነቱ የተጠበቀ ነው፤የእግረኛ ማቆረጫዉ ምቹ ነው

1) እጅግ በጣም ጥሩ 2) በጣም ጥሩ 3) ጥሩ 4) ምንም አይልም 5) ዝቅተኛ 6) በጣም ዝቅተኛ

How to used Data on software

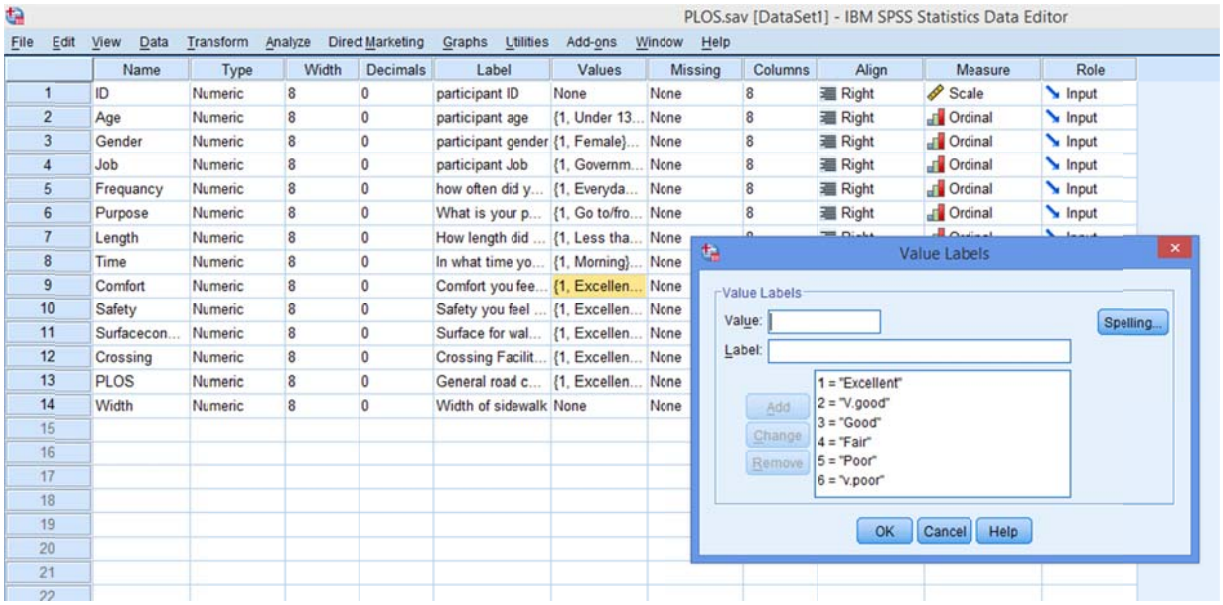
File Edit View Data Transform Analyze Direct Marketing Graphs Utilities Add-ons Window Help

	ID	Age	Gender	Job	Frequancy	Purpose	Length	Time	Comfortyoufeelwhilewalking	Safetyyoufeelwhilewalking	Surfacecondition	Crossing	Generalconditionofroad	Widthofsidewalk
1	1	2	2	1	1	1	1	1	3	3	4	3	4	2.50
2	2	2	2	2	1	1	3	1	3	3	4	4	3	2.50
3	3	2	2	1	1	1	3	4	6	5	5	5	4	2.50
4	4	2	2	2	2	1	2	1	3	3	3	3	3	2.50
5	5	2	2	2	4	4	4	4	6	5	5	5	5	2.50
6	6	2	2	2	1	1	3	2	3	3	3	3	4	2.50
7	7	2	2	4	4	2	4	3	3	2	5	6	6	2.50
8	8	2	2	1	2	1	4	4	6	6	6	5	6	2.50
9	9	2	2	1	1	1	4	1	5	5	5	6	5	2.50
10	10	2	2	1	1	1	4	1	3	3	4	6	5	2.50
11	11	2	2	1	1	1	3	1	6	6	6	6	6	2.50
12	12	2	2	1	1	1	4	4	6	6	6	6	6	2.50
13	13	2	1	3	4	3	4	4	5	5	5	5	5	2.50
14	14	2	2	1	1	1	4	4	6	6	6	6	5	2.50
15	15	2	2	4	1	2	4	4	6	6	6	6	5	2.50
16	16	2	2	1	1	1	4	4	5	5	5	5	4	2.50
17	17	2	2	2	1	1	2	1	3	4	3	3	3	2.50
18	18	2	1	3	4	3	1	1	3	4	2	3	3	2.50
19	19	2	1	2	1	1	4	4	3	3	4	5	4	2.50
20	20	2	2	2	1	1	4	4	5	5	5	5	5	2.50
21	21	2	2	1	1	1	1	1	3	3	3	5	3	2.50
22	22	2	2	1	1	1	4	4	5	5	5	5	4	2.50
23	23	2	2	1	1	1	4	1	6	5	6	6	6	2.50
24	24	3	2	2	4	4	1	3	3	4	3	3	3	2.50
25	25	2	1	3	4	4	3	4	5	5	6	5	5	2.50
26	26	2	2	1	1	1	3	4	5	5	5	5	5	2.50

PLOS.sav [DataSet1] - IBM SPSS Statistics Data Editor

File Edit View Data Transform Analyze Direct Marketing Graphs Utilities Add-ons Window Help

	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure	Role
1	ID	Numeric	8	0	participant ID	None	None	8	Right	Scale	Input
2	Age	Numeric	8	0	participant age	{1, Under 13}...	None	8	Right	Ordinal	Input
3	Gender	Numeric	8	0	participant gender	{1, Female}...	None	8	Right	Ordinal	Input
4	Job	Numeric	8	0	participant Job	{1, Government/ private office}...	None	8	Right	Ordinal	Input
5	Frequancy	Numeric	8	0	how often did y...	{1, Everyday}...	None	8	Right	Ordinal	Input
6	Purpose	Numeric	8	0	What is your p...	{1, Go to/from work}...	None	8	Right	Ordinal	Input
7	Length	Numeric	8	0	How length did ...	{1, Less than 500m}...	None	8	Right	Ordinal	Input
8	Time	Numeric	8	0	In what time yo...	{1, Morning}...	None	8	Right	Ordinal	Input
9	Comfort	Numeric	8	0	Comfort you fee...	{1, Excellent}...	None	8	Right	Ordinal	Input
10	Safety	Numeric	8	0	Safety you feel ...	{1, Excellent}...	None	8	Right	Ordinal	Input
11	Surfacecon...	Numeric	8	0	Surface for wal...	{1, Excellent}...	None	8	Right	Ordinal	Input
12	Crossing	Numeric	8	0	Crossing Facilit...	{1, Excellent}...	None	8	Right	Ordinal	Input
13	PLOS	Numeric	8	0	General road c...	{1, Excellent}...	None	8	Right	Ordinal	Input
14	Width	Numeric	8	0	Width of sidewalk	None	None	8	Right	Scale	Input



	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure	Role
1	ID	Numeric	8	0	participant ID	None	None	8	Right	Scale	Input
2	Age	Numeric	8	0	participant age	{1, Under 13...	None	8	Right	Ordinal	Input
3	Gender	Numeric	8	0	participant gender	{1, Female}...	None	8	Right	Ordinal	Input
4	Job	Numeric	8	0	participant Job	{1, Governm...	None	8	Right	Ordinal	Input
5	Frequancy	Numeric	8	0	how often did y...	{1, Everyda...	None	8	Right	Ordinal	Input
6	Purpose	Numeric	8	0	What is your p...	{1, Go to/fro...	None	8	Right	Ordinal	Input
7	Length	Numeric	8	0	How length did ...	{1, Less tha...	None				
8	Time	Numeric	8	0	In what time yo...	{1, Morning}...	None				
9	Comfort	Numeric	8	0	Comfort you fee...	{1, Excellen...	None				
10	Safety	Numeric	8	0	Safety you feel ...	{1, Excellen...	None				
11	Surfacecon...	Numeric	8	0	Surface for wal...	{1, Excellen...	None				
12	Crossing	Numeric	8	0	Crossing Facilit...	{1, Excellen...	None				
13	PLOS	Numeric	8	0	General road c...	{1, Excellen...	None				
14	Width	Numeric	8	0	Width of sidewalk	None	None				
15											
16											
17											
18											
19											
20											
21											
22											

Collected Data

Id	Age	Gender	Job	Frequency	Purpose	Length	Time	Comfort	Safety	Surface Condition	Zebra Crossing	PLOS	Side walk width
1	2	2	1	1	1	1	1	3	3	4	4	4	2.5
2	2	2	2	1	1	3	1	3	3	4	4	3	2.5
3	2	2	1	1	1	3	4	3	3	4	5	4	2.5
4	2	2	2	2	1	2	1	3	3	3	3	3	2.5
5	2	2	2	4	4	4	4	6	5	5	5	5	2.5
6	2	2	2	1	1	3	2	3	3	4	3	4	2.5
7	2	2	4	4	2	4	3	3	2	5	6	6	2.5
8	2	2	1	2	1	4	4	6	6	6	5	6	2.5
9	2	2	1	1	1	4	1	5	5	5	6	5	2.5
10	2	2	1	1	1	4	1	3	3	4	6	5	2.5
11	2	2	1	1	1	3	1	6	6	6	6	6	2.5
12	2	2	1	1	1	4	4	4	5	6	6	6	2.5
13	2	1	3	4	3	4	4	4	5	5	5	5	2.5
14	2	2	1	1	1	4	4	4	5	6	6	5	2.5
15	2	2	4	1	2	4	4	4	5	6	6	5	2.5
16	2	2	1	1	1	4	4	4	4	5	5	4	2.5
17	2	2	2	1	1	2	1	3	2	3	3	3	2.5
18	2	1	3	4	3	1	1	3	3	2	3	3	2.5
19	2	1	2	1	1	4	4	3	4	3	5	4	2.5
20	2	2	2	1	1	4	4	5	5	4	4	5	2.5
21	2	2	1	1	1	1	1	3	4	3	3	3	2.5
22	2	2	1	1	1	4	4	5	5	5	5	4	2.5
23	2	2	1	1	1	4	1	6	5	6	5	6	2.5
24	3	2	2	4	4	1	3	3	4	3	3	3	2.5
25	2	1	3	4	4	3	4	5	5	6	5	5	2.5
26	2	2	1	1	1	3	3	3	3	4	4	3	2.5
27	2	2	1	1	1	4	3	3	3	4	4	3	2.5
28	2	2	2	2	1	4	4	5	5	6	6	6	2.5
29	2	2	1	1	1	3	1	4	4	4	5	4	2.5
30	2	2	4	1	2	2	1	4	4	5	5	4	2.5
31	2	2	1	1	1	3	1	4	5	4	4	4	2.5
32	2	2	4	1	2	4	4	5	5	6	5	6	2.5

Id	Age	Gender	Job	Frequency	Purpose	Length	Time	Comfort	Safety	Surface Condition	Zebra Crossing	PLOS	Side walk width
33	2	2	1	1	1	4	4	5	5	5	5	5	2.5
34	2	2	1	1	1	4	1	4	4	5	5	5	2.5
35	2	1	1	2	4	3	3	2	2	3	3	3	2.5
36	2	1	1	2	4	1	3	2	5	5	3	5	2.5
37	2	2	1	1	1	3	3	3	3	4	4	3	2.5
38	2	2	1	2	1	3	3	3	3	4	4	3	2.5
39	3	2	2	2	3	4	1	5	5	5	6	6	2.5
40	3	2	1	1	1	4	1	5	5	6	5	6	2.5
41	2	2	1	1	1	3	1	6	6	6	6	6	2.5
42	2	2	1	1	1	4	3	3	3	4	4	3	2.5
43	2	1	2	1	1	4	3	3	3	3	4	3	2.5
44	3	2	1	1	1	2	4	2	3	4	3	4	2.5
45	1	2	4	1	2	4	4	1	1	2	2	2	2.5
46	2	1	2	1	1	3	1	4	4	5	5	5	2.5
47	3	2	2	1	1	2	4	4	4	3	3	4	2.5
48	2	1	3	2	3	2	1	3	2	2	2	3	2.5
49	2	2	2	2	1	2	1	2	3	2	3	3	2.5
50	2	1	1	1	1	4	1	4	4	5	5	5	2.5
51	2	1	1	1	4	2	1	4	5	6	5	6	2.5
52	2	1	1	1	3	2	2	5	5	6	5	5	2.5
53	1	1	4	1	2	4	4	1	3	2	2	3	2.5
54	2	1	1	4	3	1	1	2	2	3	3	4	2.5
55	2	1	3	4	3	2	1	2	2	3	2	4	2.5
56	2	1	1	1	5	2	4	4	3	4	5	6	2.5
57	2	2	2	1	3	2	1	4	4	3	4	4	2.5
58	2	1	1	3	1	1	3	2	2	2	5	3	2.5
59	2	1	1	1	4	2	3	4	5	1	2	2	2.5
60	2	1	1	1	4	2	2	2	2	1	4	4	2.5
61	2	1	1	1	2	3	2	5	2	4	1	4	2.5
62	2	1	1	1	2	2	4	2	3	6	5	6	2.5
63	2	1	1	1	3	2	2	5	5	2	3	6	2.5
64	2	1	1	4	4	1	3	2	2	2	4	2	2.5
65	3	2	2	2	2	1	2	3	3	2	3	2	2.5
66	3	2	2	1	1	3	4	3	4	3	4	3	2.5
67	1	2	4	1	2	1	1	2	2	4	4	4	2.5

Id	Age	Gender	Job	Frequency	Purpose	Length	Time	Comfort	Safety	Surface Condition	Zebra Crossing	PLOS	Side walk width
68	2	1	1	3	3	2	1	2	2	2	3	3	2.5
69	2	2	2	1	3	4	4	5	5	4	3	5	2.5
70	2	2	1	1	1	4	4	5	4	3	3	3	2.5
71	2	1	1	3	1	1	3	5	3	5	2	5	2.5
72	2	1	3	2	2	1	4	2	3	3	1	2	2.5
73	2	2	1	1	3	2	4	4	3	3	3	4	2.5
74	2	1	2	3	2	3	2	2	1	3	2	2	2.5
75	2	1	1	2	2	1	2	5	3	4	4	5	2.5
76	2	2	1	1	1	2	4	3	4	4	4	5	2.5
77	2	2	1	1	1	2	4	3	2	3	3	4	2.5
78	2	2	1	1	1	2	4	2	3	3	5	6	2.5
79	2	2	2	1	1	3	4	3	3	6	6	6	2.5
80	2	1	1	1	1	2	4	2	2	4	5	6	2.5
81	3	2	2	1	3	2	4	3	2	3	5	6	2.5
82	2	2	2	1	1	2	1	3	3	5	5	5	2.5
83	2	2	2	1	1	3	4	3	4	5	5	6	2.5
84	3	2	2	1	3	3	4	3	3	4	5	6	2.5
85	3	1	3	1	4	2	1	4	4	3	4	6	2.5
86	2	2	2	1	1	3	4	4	3	5	6	6	2.5
87	2	2	2	1	3	3	4	3	5	5	5	6	2.5
88	3	2	2	1	3	4	4	3	5	5	4	6	2.5
89	1	1	4	1	2	2	4	3	4	3	4	5	2.5
90	2	1	3	1	4	2	4	4	3	4	5	6	2.5
91	3	2	2	1	1	3	4	3	2	3	5	5	2.5
92	2	2	2	1	1	2	4	5	5	5	5	6	2.5
93	3	2	2	1	1	2	1	5	5	5	6	5	2.5
94	2	2	1	1	1	2	4	3	3	3	4	5	2.5
95	2	2	1	1	1	1	4	3	2	3	5	5	2.5
96	2	1	1	1	1	1	4	3	3	4	4	6	2.5
97	2	2	1	1	1	4	4	4	5	4	5	6	2.5
98	2	1	4	2	2	3	3	2	4	4	4	5	2.5
99	1	1	4	1	2	1	1	3	3	3	3	5	2.5
100	2	2	1	1	1	4	4	5	5	5	5	4	2.5
101	2	2	1	4	1	2	3	3	3	3	3	3	2.5
102	2	2	4	4	2	4	1	2	1	2	3	2	2.5

Id	Age	Gender	Job	Frequency	Purpose	Length	Time	Comfort	Safety	Surface Condition	Zebra Crossing	PLOS	Side walk width
103	2	1	2	1	1	1	3	3	3	5	3	5	2.5
104	2	2	2	1	1	4	1	5	3	5	3	4	2.5
105	2	1	3	2	3	2	2	3	4	5	6	6	2.5
106	3	2	2	1	1	1	1	4	3	4	3	5	2.5
107	2	2	1	1	1	2	1	4	5	4	5	5	2.5
108	2	1	2	1	1	1	4	3	3	4	3	4	2.5
109	3	2	2	1	1	2	1	4	3	4	5	5	2.5
110	2	2	2	1	1	4	3	4	5	4	3	4	2.5
111	2	2	1	1	1	3	3	4	5	4	3	4	2.5
112	3	2	2	4	1	1	1	4	4	4	4	4	2.5
113	2	2	1	4	1	2	1	4	5	3	5	5	2.5
114	2	2	2	2	1	2	1	4	2	5	1	4	2.5
115	2	1	2	2	1	2	1	1	5	2	3	6	2.5
116	2	2	2	1	3	3	3	2	1	4	2	3	2.5
117	1	2	4	1	2	3	1	4	5	2	4	6	2.5
118	2	2	2	2	1	1	1	5	2	4	2	2	2.5
119	2	2	2	4	4	2	3	5	4	4	2	5	2.5
120	1	2	4	1	2	2	1	3	4	3	5	4	2.5
121	1	2	4	1	2	2	1	3	4	2	5	4	2.5
122	1	2	4	1	2	2	1	2	4	3	5	4	2.5
123	1	2	4	1	2	2	1	3	4	2	5	4	2.5
124	2	2	1	4	1	1	1	6	6	5	5	6	2.5
125	2	1	1	1	1	2	1	4	4	3	3	4	2.5
126	3	2	2	1	3	4	1	3	4	4	4	5	2.5
127	3	1	3	4	3	2	1	5	4	4	3	4	2.5
128	2	2	2	1	1	3	1	5	6	4	5	5	2.5
129	2	1	4	1	2	2	1	4	4	4	3	4	2.5
130	2	2	2	4	1	2	1	4	5	5	4	6	2.5
131	2	1	2	1	1	2	1	3	4	3	5	4	2.5
132	2	2	2	2	1	1	1	3	5	3	5	6	2.5
133	2	2	4	1	2	3	1	4	5	6	5	6	2.5
134	2	2	2	1	1	1	1	4	3	6	6	6	2.5
135	2	2	2	4	1	1	3	2	1	5	2	1	2.5
136	2	2	2	1	1	2	1	2	3	2	2	5	2.5
137	2	1	2	1	1	3	1	3	4	5	4	5	2.5

Id	Age	Gender	Job	Frequency	Purpose	Length	Time	Comfort	Safety	Surface Condition	Zebra Crossing	PLOS	Side walk width
138	2	1	3	2	3	3	1	3	2	5	3	4	2.5
139	2	2	4	1	2	2	1	4	3	5	4	5	2.5
140	2	2	4	1	2	4	1	5	4	5	5	5	2.5
141	2	1	3	1	3	4	1	3	4	5	4	5	2.5
142	2	2	2	1	1	4	1	4	4	4	4	5	2.5
143	2	2	2	1	1	1	3	4	4	4	4	6	2.5
144	2	2	2	2	4	4	2	5	2	1	1	4	2.5
145	2	1	3	1	3	2	1	2	1	1	1	2	2.5
146	1	1	3	1	3	4	3	4	4	1	4	2	2.5
147	2	2	2	2	4	3	2	4	4	5	4	2	2.5
148	2	2	1	1	4	2	1	5	5	4	4	4	2.5
149	2	2	4	1	4	4	2	5	5	5	4	2	2.5
150	2	1	2	1	1	1	3	1	3	5	4	3	2.5
151	2	1	2	1	1	2	2	5	4	5	4	6	2.5
152	2	2	2	1	1	3	1	5	3	5	5	6	2.5
153	2	1	1	1	1	2	1	4	3	5	4	5	2.5
154	2	2	4	1	2	4	1	3	4	5	5	5	2.5
155	2	1	2	1	3	4	1	4	4	6	6	5	2.5
156	2	2	2	1	1	1	1	2	3	2	2	3	2.5
157	2	1	1	1	1	3	1	3	4	5	4	4	2.5
158	2	2	1	1	1	2	1	3	2	5	3	4	2.5
159	3	1	3	2	3	2	1	5	5	6	6	5	2.5
160	3	2	2	4	4	3	3	4	5	4	5	6	2.5
161	2	2	2	1	4	4	3	5	4	5	6	6	2.5
162	2	1	3	1	3	3	3	3	4	3	3	3	2.5
163	2	2	4	1	2	4	3	3	4	3	3	3	2.5
164	3	1	3	2	3	3	1	4	5	4	6	6	2.5
165	1	1	4	1	2	3	1	4	4	6	5	5	2.5
166	2	2	4	1	2	3	3	4	5	5	6	5	2.5
167	2	2	2	1	1	3	1	3	1	6	6	6	2.5
168	3	2	4	4	4	2	3	3	4	3	3	3	2.5
169	2	2	1	1	1	2	3	3	4	3	3	3	2.5
170	2	1	3	2	3	2	1	4	4	5	5	6	2.5
171	2	2	4	1	2	3	1	5	5	4	4	6	2.5
172	2	2	2	1	1	4	1	4	5	4	4	5	2.5

Id	Age	Gender	Job	Frequency	Purpose	Length	Time	Comfort	Safety	Surface Condition	Zebra Crossing	PLOS	Side walk width
173	2	2	2	1	1	2	1	6	6	5	6	5	2.5
174	2	1	3	2	3	2	2	6	6	5	6	6	2.5
175	2	2	2	1	1	3	1	4	5	5	6	6	2.5
176	3	2	2	1	1	4	1	4	5	5	6	6	2.5
177	3	1	3	3	3	2	2	4	5	5	6	6	2.5
178	3	1	3	2	3	2	2	4	5	6	6	6	0.5
179	2	1	3	2	3	2	2	4	5	6	6	6	0.5
180	3	2	2	1	1	2	1	4	5	6	6	6	0.5
181	3	2	2	1	1	3	1	4	6	6	6	6	0.5
182	3	2	2	1	1	3	1	4	6	6	6	6	0.5
183	2	2	2	1	1	4	1	6	6	5	6	6	0.5
184	3	2	2	1	1	3	1	6	6	5	6	6	0.5
185	2	2	2	1	1	4	3	6	6	6	6	6	0.5
186	2	1	1	1	1	1	1	5	6	6	6	6	0.5
187	3	1	3	2	3	2	2	5	6	6	6	6	0.5
188	2	1	3	1	3	2	2	5	6	6	6	6	0.5
189	2	1	3	1	3	1	2	5	6	6	6	6	0.5
190	3	1	3	2	3	1	1	5	6	6	6	6	0.5
191	2	2	2	1	1	2	2	6	6	6	6	6	0.5
192	2	2	2	1	1	3	1	6	6	6	6	6	0.5
193	2	2	2	1	1	4	1	6	6	6	6	6	0.5
194	2	2	2	3	1	4	1	6	6	6	6	6	0.5
195	2	2	2	1	1	4	1	6	6	5	6	6	0.5
196	3	2	2	1	1	4	3	6	6	5	6	6	0.5
197	3	2	2	4	3	2	1	6	6	5	6	6	0.5
198	2	2	3	1	1	3	3	5	6	5	6	6	0.5
199	2	2	3	1	2	3	1	5	6	5	6	6	0.5
200	2	2	1	2	1	4	1	5	6	6	6	6	0.5
201	2	2	2	1	1	1	1	5	6	6	6	6	0.5
202	3	2	2	1	1	2	1	5	6	6	5	6	0.5
203	2	1	3	3	3	4	1	6	6	6	5	6	0.5
204	2	2	2	1	1	3	1	6	6	5	5	6	0.5
205	2	2	2	1	1	2	1	6	6	5	5	6	0.5
206	2	1	3	3	2	4	3	6	6	5	5	6	0.5
207	2	1	3	2	3	2	2	6	6	5	5	6	0.5

Id	Age	Gender	Job	Frequency	Purpose	Length	Time	Comfort	Safety	Surface Condition	Zebra Crossing	PLOS	Side walk width
208	2	1	3	2	3	2	2	6	4	5	5	6	0.5
209	2	1	3	1	2	3	2	5	4	5	5	6	0.5
210	2	1	3	2	3	2	2	5	4	5	5	6	0.5
211	2	1	3	2	3	2	2	5	4	5	5	6	0.5
212	2	1	3	1	2	3	2	5	5	5	5	6	0.5
213	2	1	3	2	3	2	2	5	5	5	5	6	0.5
214	2	1	3	2	3	2	2	5	5	5	6	6	0.5
215	2	1	3	2	3	2	2	6	5	6	6	6	0.5
216	2	1	4	1	2	1	1	4	6	6	5	6	0.5
217	2	2	1	1	1	3	2	6	6	5	5	6	0.5
218	1	2	4	1	2	3	1	6	5	5	5	6	0.5
219	3	2	2	1	1	4	1	6	6	5	5	6	0.5
220	2	1	1	2	1	3	3	6	6	5	6	6	0.5
221	2	2	4	3	4	3	3	6	6	5	6	6	0.5
222	2	2	2	1	1	2	1	4	6	5	6	6	0.5
223	2	1	2	2	3	1	2	4	6	5	6	6	0.5
224	3	2	2	1	1	2	1	5	6	5	6	6	0.5
225	2	2	1	1	1	2	2	5	5	5	6	6	0.5
226	2	1	3	2	3	1	3	4	5	6	6	6	0.5
227	2	2	4	1	2	2	4	4	5	6	5	6	0.5
228	3	2	2	1	1	2	1	4	5	6	5	6	0.5
229	2	1	3	2	3	2	2	4	5	6	5	6	0.5
230	2	1	3	2	3	2	2	4	5	6	5	6	0.5
231	2	1	3	2	3	2	2	4	6	6	5	6	0.5
232	2	1	3	2	3	2	2	4	5	6	5	6	0.5
233	2	1	3	2	3	2	2	4	6	6	5	6	0.5
234	2	1	3	2	3	2	2	5	5	6	5	6	0.5
235	2	1	3	2	3	2	2	5	5	5	5	6	0.5
236	2	1	3	2	3	2	2	5	5	6	6	6	0.5
237	3	2	2	1	1	2	1	6	6	6	6	6	0.5
238	3	2	1	1	2	3	1	6	5	6	6	6	0.5
239	2	2	4	1	2	2	1	6	5	6	5	6	0.5
240	2	1	3	1	3	1	1	6	5	6	5	6	0.5
241	2	1	1	3	4	4	3	5	5	6	5	6	0.5
242	3	2	2	1	1	2	2	5	5	6	5	6	0.5

Id	Age	Gender	Job	Frequency	Purpose	Length	Time	Comfort	Safety	Surface Condition	Zebra Crossing	PLOS	Side walk width
243	2	2	2	1	4	2	3	5	5	5	5	6	0.5
244	2	2	2	1	3	4	1	5	5	5	5	5	0.5
245	2	2	1	1	2	3	3	5	6	5	5	6	0.5
246	2	2	2	1	1	4	1	5	5	6	5	6	0.5
247	3	2	2	1	1	4	1	5	6	5	5	6	0.5
248	3	2	1	1	4	3	1	6	5	6	6	6	0.5
249	2	1	3	1	1	4	1	6	6	6	6	6	0.5
250	2	1	1	1	1	4	3	5	5	6	6	6	0.5
251	2	2	2	1	1	3	1	5	6	6	6	6	0.5
252	2	2	2	1	1	4	1	5	5	6	5	6	0.5
253	3	2	1	4	1	4	3	6	6	6	5	6	0.5
254	3	1	3	1	3	1	2	6	6	6	5	6	0.5
255	2	1	2	1	3	2	1	6	6	6	5	6	0.5
256	2	1	2	1	2	3	3	6	6	6	6	6	0.5
257	2	2	2	1	4	4	1	6	6	6	6	6	0.5
258	2	1	3	2	3	2	2	5	5	6	5	6	0.5
259	2	1	3	2	3	2	2	5	5	6	5	6	0.5
260	2	1	3	2	3	2	2	5	5	6	5	6	0.5
261	2	1	3	2	3	2	2	4	5	6	5	6	0.5
262	2	1	3	2	3	2	2	4	6	5	5	6	0.5
263	2	1	3	2	3	2	2	4	5	5	5	6	0.5
264	2	1	3	2	3	2	2	5	5	6	6	6	0.5
265	2	1	3	2	3	2	2	5	5	6	6	6	0.5
266	2	1	3	2	3	2	2	5	6	6	6	6	0.5
267	2	1	3	2	3	2	2	5	5	5	6	6	0.5
268	2	1	3	2	3	2	2	5	5	5	6	6	0.5
269	2	1	3	2	3	2	2	5	5	6	6	6	0.5
270	2	1	3	2	3	2	2	5	5	6	6	6	0.5
271	2	1	3	2	3	2	2	5	6	6	6	6	0.5
272	2	1	3	2	3	2	2	5	5	5	6	6	0.5
273	2	1	3	2	3	2	2	5	5	5	6	6	0.5
274	2	1	3	2	3	2	2	5	5	5	5	6	0.5
275	2	1	3	2	3	2	2	6	5	6	6	6	0.5
276	2	1	3	2	3	2	2	5	5	5	5	6	0.5
277	2	1	3	2	3	2	2	5	6	6	5	6	0.5

Id	Age	Gender	Job	Frequency	Purpose	Length	Time	Comfort	Safety	Surface Condition	Zebra Crossing	PLOS	Side walk width
278	3	1	3	2	4	3	1	6	5	5	5	6	0.5
279	2	1	3	2	3	2	2	5	5	6	6	6	0.5
280	2	1	3	2	3	2	2	5	5	6	6	6	0.5
281	2	1	3	2	3	2	2	5	5	5	6	6	0.5
282	2	1	3	2	3	2	2	5	6	6	6	6	0.5
283	2	1	3	2	3	2	2	5	5	5	6	6	0.5
284	2	1	3	2	3	2	2	5	5	6	6	6	0.5
285	2	1	3	2	3	2	2	5	5	5	6	6	0.5
286	2	1	3	2	3	2	2	5	6	5	6	6	0.5
287	3	1	3	2	4	3	1	5	6	6	5	6	0.5
288	2	1	3	2	3	2	2	5	5	5	5	6	0.5
289	2	1	3	2	3	2	2	5	5	6	5	6	0.5
290	3	2	2	1	1	2	1	6	6	5	5	6	0.5
291	3	2	1	1	2	3	1	6	6	5	5	6	0.5
292	2	2	4	1	2	2	1	6	5	6	5	6	0.5
293	2	1	3	1	3	1	1	6	6	5	5	6	0.5
294	2	1	1	3	4	4	3	5	6	5	5	6	0.5
295	3	2	2	1	1	2	2	5	5	5	5	6	0.5
296	2	2	2	1	4	2	3	5	6	5	5	6	0.5
297	2	2	2	1	3	4	1	5	5	5	5	5	0.5
298	2	2	1	1	2	3	3	5	5	6	5	6	0.5
299	2	2	2	1	1	4	1	5	6	5	5	6	0.5
300	3	2	2	1	1	4	1	5	5	5	5	6	0.5
301	2	2	2	1	1	1	1	2	3	2	2	3	2.5
302	2	1	1	1	1	3	1	3	4	5	4	4	2.5
303	2	2	1	1	1	2	1	3	2	5	3	4	2.5
304	3	1	3	2	3	2	1	5	5	6	6	5	2.5
305	3	2	2	4	4	3	3	4	5	4	5	6	2.5
306	2	2	2	1	4	4	3	5	4	5	6	6	2.5
307	2	1	3	1	3	3	3	3	4	3	3	3	2.5
308	2	2	4	1	2	4	3	3	4	3	3	3	2.5
309	3	1	3	2	3	3	1	4	5	4	6	6	2.5
310	1	1	4	1	2	3	1	4	4	6	5	5	2.5
311	2	2	4	1	2	3	3	4	5	5	6	5	2.5
312	2	2	2	1	1	3	1	3	1	6	6	6	2.5

Id	Age	Gender	Job	Frequency	Purpose	Length	Time	Comfort	Safety	Surface Condition	Zebra Crossing	PLOS	Side walk width
313	3	2	4	4	4	2	3	3	4	3	3	3	2.5
314	2	2	1	1	1	2	3	3	4	3	3	3	2.5
315	2	1	3	2	3	2	1	4	4	5	5	6	2.5
316	2	1	1	2	4	1	3	2	5	5	3	5	2.5
317	2	2	1	1	1	3	3	3	3	4	4	3	2.5
318	2	2	1	2	1	3	3	3	3	4	4	3	2.5
319	3	2	2	2	3	4	1	5	5	5	6	6	2.5
320	3	2	1	1	1	4	1	5	5	6	5	6	2.5
321	2	2	1	1	1	3	1	6	6	6	6	6	2.5
322	2	2	1	1	1	4	3	3	4	3	3	3	2.5
323	2	1	2	1	1	4	3	3	4	3	3	3	2.5
324	3	2	1	1	1	2	4	2	4	3	3	4	2.5
325	1	2	4	1	2	4	4	3	3	4	2	2	2.5
326	2	1	2	1	1	3	1	5	2	5	5	5	2.5
327	3	2	2	1	1	2	4	2	3	4	3	4	2.5
328	2	1	3	2	3	2	1	2	2	2	2	3	2.5
329	2	2	2	2	1	2	1	2	2	2	3	3	2.5
330	2	1	1	1	1	4	1	5	5	5	5	5	2.5
331	2	1	1	1	4	2	1	6	2	6	5	6	2.5
332	2	2	1	1	1	4	3	3	4	3	3	3	2.5
333	2	1	2	1	1	4	3	3	4	3	3	3	2.5
334	3	2	1	1	1	2	4	2	4	3	3	4	2.5
335	1	2	4	1	2	4	4	3	3	4	2	2	2.5
336	2	1	2	1	1	3	1	5	2	5	5	5	2.5
337	3	2	2	1	1	2	4	2	3	4	3	4	2.5
338	2	1	3	2	3	2	1	2	2	2	2	3	2.5
339	2	2	2	2	1	2	1	2	2	2	3	3	2.5
340	2	1	1	1	1	4	1	5	5	5	5	5	2.5
341	2	1	1	1	4	2	1	5	2	6	6	6	2.5
342	3	1	3	2	4	3	1	5	6	5	6	6	0.5
343	2	1	3	2	3	2	2	5	5	6	6	6	0.5
344	2	1	3	2	3	2	2	5	5	6	6	6	0.5
345	2	1	3	2	3	2	2	5	5	5	5	6	0.5
346	2	1	3	2	3	2	2	6	5	4	5	6	0.5
347	2	1	3	2	3	2	2	6	5	5	6	6	0.5

Id	Age	Gender	Job	Frequency	Purpose	Length	Time	Comfort	Safety	Surface Condition	Zebra Crossing	PLOS	Side walk width
348	2	1	3	2	3	2	2	5	5	5	5	6	0.5
349	2	1	3	2	3	2	2	5	5	4	6	6	0.5
350	2	1	3	2	3	2	2	5	6	5	6	6	0.5
351	3	1	3	2	4	3	1	5	6	5	5	6	0.5
352	2	1	3	2	3	2	2	5	5	5	6	6	0.5
353	2	1	3	2	3	2	2	5	5	5	5	6	0.5
354	3	2	2	1	1	2	1	6	5	6	6	6	0.5
355	3	2	1	1	2	3	1	6	6	6	6	6	0.5
356	2	2	4	1	2	2	1	6	5	6	6	6	0.5
357	2	1	3	1	3	1	1	6	6	6	5	6	0.5
358	2	1	1	3	4	4	3	5	5	6	5	6	0.5
359	3	2	2	1	1	2	2	5	6	6	5	6	0.5
360	2	2	2	1	4	2	3	5	6	6	5	6	0.5
361	2	2	2	1	3	4	1	5	5	5	5	5	0.5
362	2	2	1	1	2	3	3	5	6	5	5	6	0.5
363	2	2	2	1	1	4	1	5	6	5	5	6	0.5
364	3	2	2	1	1	4	1	5	6	5	5	6	0.5
365	2	2	2	1	1	1	1	2	3	2	2	3	2.5
366	2	1	1	1	1	3	1	3	4	5	4	4	2.5
367	2	2	1	1	1	2	1	3	2	5	3	4	2.5
368	3	1	3	2	3	2	1	5	5	6	6	5	2.5
369	3	2	3	4	4	3	3	4	5	6	5	6	2.5
370	2	2	1	1	4	4	3	5	4	5	6	6	2.5
371	2	1	3	1	3	3	3	3	2	3	4	3	2.5
372	2	2	4	1	2	4	3	3	2	3	4	3	2.5
373	3	1	3	2	3	3	1	4	4	5	6	6	2.5
374	1	1	4	1	2	3	1	4	4	6	5	5	2.5
375	2	2	4	1	2	3	3	4	5	5	6	5	2.5
376	2	2	2	1	1	3	1	3	1	6	6	6	2.5
377	3	2	4	4	4	2	3	3	3	2	4	3	2.5
378	2	2	1	1	1	2	3	3	4	3	4	3	2.5
379	2	1	3	2	3	2	1	4	5	5	5	6	2.5
380	2	1	1	2	4	1	3	3	4	5	4	5	2.5
381	2	2	1	1	1	3	3	3	4	3	3	3	2.5
382	2	2	1	2	1	3	3	3	4	3	3	3	2.5

Id	Age	Gender	Job	Frequency	Purpose	Length	Time	Comfort	Safety	Surface Condition	Zebra Crossing	PLOS	Side walk width
383	3	2	2	2	3	4	1	5	5	5	6	6	2.5
384	3	2	1	1	1	4	1	5	5	6	5	6	2.5
385	2	2	1	1	1	3	1	6	6	6	6	6	2.5
386	2	2	1	1	1	4	3	3	4	3	4	3	2.5
387	2	1	2	1	1	4	3	3	4	3	4	3	2.5
388	3	2	1	1	1	2	4	2	4	3	3	4	2.5
389	1	2	4	1	2	4	4	3	3	4	2	2	2.5
390	2	1	2	1	1	3	1	5	2	5	5	5	2.5
391	3	2	2	1	1	2	4	2	3	4	3	4	2.5
392	2	1	3	2	3	2	1	2	2	2	2	3	2.5
393	2	2	2	2	1	2	1	2	2	2	3	3	2.5
394	2	1	1	1	1	4	1	5	5	5	5	5	2.5
395	2	1	1	1	4	2	1	6	2	6	5	6	2.5
396	2	2	1	1	1	4	3	3	4	3	3	3	2.5
397	2	1	2	1	1	4	3	2	4	3	3	3	2.5
398	3	2	1	1	1	2	4	2	4	3	4	4	2.5
399	1	2	4	1	2	4	4	3	3	4	2	2	2.5
400	2	1	2	1	1	3	1	5	2	5	5	5	2.5
401	3	2	2	1	1	2	4	2	3	4	3	4	2.5
402	2	1	3	2	3	2	1	2	2	2	2	3	2.5
403	2	2	2	2	1	2	1	2	2	2	3	3	2.5
404	2	1	1	1	1	4	1	5	5	5	5	5	2.5
405	2	1	1	1	4	2	1	6	2	6	5	6	2.5
406	3	1	3	2	4	3	1	6	6	5	5	6	0.5
407	2	1	3	2	3	2	2	5	5	6	5	6	0.5
408	2	1	3	2	3	2	2	5	5	6	5	6	0.5
409	2	1	3	2	3	2	2	4	5	5	4	6	0.5
410	2	1	3	2	3	2	2	4	5	5	4	6	0.5
411	2	1	3	2	3	2	2	4	5	5	4	6	0.5
412	2	1	3	2	3	2	2	4	5	5	4	6	0.5
413	2	1	3	2	3	2	2	4	5	5	4	6	0.5
414	2	1	3	2	3	2	2	4	6	5	6	6	0.5
415	3	1	3	2	4	3	1	4	6	5	5	6	0.5
416	2	1	3	2	3	2	2	5	5	5	5	6	0.5
417	2	1	3	2	3	2	2	5	5	5	5	6	0.5

Id	Age	Gender	Job	Frequency	Purpose	Length	Time	Comfort	Safety	Surface Condition	Zebra Crossing	PLOS	Side walk width
418	3	2	2	1	1	2	1	6	6	6	5	6	0.5
419	3	2	1	1	2	3	1	6	6	6	5	6	0.5
420	2	2	4	1	2	2	1	6	6	5	5	6	0.5
421	2	1	3	1	3	1	1	6	6	5	5	6	0.5
422	2	1	1	3	4	4	3	5	6	6	5	6	0.5
423	3	2	2	1	1	2	2	5	6	6	5	6	0.5
424	2	2	2	1	4	2	3	5	6	6	5	6	0.5
425	2	2	2	1	3	4	1	5	5	5	5	5	0.5
426	2	2	1	1	2	3	3	5	6	5	5	6	0.5
427	2	2	2	1	1	4	1	5	6	5	5	6	0.5
428	3	2	2	1	1	4	1	5	6	5	5	6	0.5
429	2	2	2	1	1	1	1	2	2	3	3	3	2.5
430	2	1	1	1	1	3	1	3	4	5	4	4	2.5
431	2	2	1	1	1	2	1	3	2	5	3	4	2.5
432	3	1	3	2	3	2	1	5	5	6	6	5	2.5
433	3	2	2	4	4	3	3	4	5	4	5	6	2.5
434	2	2	2	1	4	4	3	5	4	5	6	6	2.5
435	2	1	3	1	3	3	3	3	4	3	3	3	2.5
436	2	2	4	1	2	4	3	3	4	3	3	3	2.5
437	3	1	3	2	3	3	1	4	4	5	6	6	2.5
438	1	1	4	1	2	3	1	4	4	6	5	5	2.5
439	2	2	4	1	2	3	3	4	5	5	6	5	2.5
440	2	2	2	1	1	3	1	5	5	6	6	6	2.5
441	3	2	4	4	4	2	3	3	3	3	3	3	2.5
442	2	2	1	1	1	2	3	3	3	4	3	3	2.5
443	2	1	3	2	3	2	1	4	4	5	5	6	2.5
444	2	1	1	2	4	1	3	3	4	5	4	5	2.5
445	2	2	1	1	1	3	3	3	4	3	3	3	2.5
446	2	2	1	2	1	3	3	3	4	3	3	3	2.5
447	3	2	2	2	3	4	1	5	5	5	6	6	2.5
448	3	2	1	1	1	4	1	5	5	6	5	6	2.5
449	2	2	1	1	1	3	1	5	5	6	6	6	2.5
450	2	2	1	1	1	4	3	3	4	3	4	3	2.5
451	2	1	2	1	1	4	3	3	3	4	3	3	2.5
452	3	2	1	1	1	2	4	3	3	4	4	4	2.5

Id	Age	Gender	Job	Frequency	Purpose	Length	Time	Comfort	Safety	Surface Condition	Zebra Crossing	PLOS	Side walk width
453	1	2	4	1	2	4	4	3	3	4	2	2	2.5
454	2	1	2	1	1	3	1	5	2	5	5	5	2.5
455	3	2	2	1	1	2	4	2	3	4	3	4	2.5
456	2	1	3	2	3	2	1	2	2	2	2	3	2.5
457	2	2	2	2	1	2	1	2	2	2	3	3	2.5
458	2	1	1	1	1	4	1	5	5	5	5	5	2.5
459	2	1	1	1	4	2	1	6	2	6	5	6	2.5
460	2	2	1	1	1	4	3	3	4	3	3	3	2.5
461	2	1	2	1	1	4	3	3	4	3	3	3	2.5
462	3	2	1	1	1	2	4	2	4	3	3	4	2.5
463	1	2	4	1	2	4	4	3	3	4	2	2	2.5
464	2	1	2	1	1	3	1	5	2	5	5	5	2.5
465	3	2	2	1	1	2	4	2	3	4	3	4	2.5
466	2	1	3	2	3	2	1	2	2	2	2	3	2.5
467	2	2	2	2	1	2	1	2	2	2	3	3	2.5
468	2	1	1	1	1	4	1	5	5	5	5	5	2.5
469	2	1	1	1	4	2	1	6	2	6	5	6	2.5
470	3	1	3	2	4	3	1	6	6	5	5	6	0.5
471	2	1	3	2	3	2	2	5	5	6	5	6	0.5
472	2	1	3	2	3	2	2	5	5	6	5	6	0.5
473	2	1	3	2	3	2	2	4	5	5	5	6	0.5
474	2	1	3	2	3	2	2	4	5	5	5	6	0.5
475	2	1	3	2	3	2	2	4	5	5	5	6	0.5
476	2	1	3	2	3	2	2	4	5	5	5	6	0.5
477	2	1	3	2	3	2	2	4	5	5	5	6	0.5
478	2	1	3	2	3	2	2	4	6	5	6	6	0.5
479	3	1	3	2	4	3	1	4	6	5	5	6	0.5
480	2	1	3	2	3	2	2	5	5	5	5	6	0.5
481	2	1	3	2	3	2	2	5	5	6	5	6	0.5
482	3	2	2	1	1	2	1	6	6	6	5	6	0.5
483	3	2	1	1	2	3	1	6	6	6	5	6	0.5
484	2	2	4	1	2	2	1	6	6	6	5	6	0.5
485	2	1	3	1	3	1	1	6	6	6	5	6	0.5
486	2	1	1	3	4	4	3	5	6	6	5	6	0.5
487	3	2	2	1	1	2	2	5	6	6	5	6	0.5

Id	Age	Gender	Job	Frequency	Purpose	Length	Time	Comfort	Safety	Surface Condition	Zebra Crossing	PLOS	Side walk width
488	2	2	2	1	4	2	3	5	6	6	5	6	0.5
489	2	2	2	1	3	4	1	5	5	5	5	5	0.5
490	2	2	1	1	2	3	3	5	6	5	5	6	0.5
491	2	2	2	1	1	4	1	5	6	5	5	6	0.5
492	3	2	2	1	1	4	1	5	6	5	5	6	0.5
493	2	2	2	1	1	1	1	2	3	2	2	3	2.5
494	2	1	1	1	1	3	1	3	4	5	4	4	2.5
495	2	2	1	1	1	2	1	3	2	5	3	4	2.5
496	3	1	3	2	3	2	1	5	5	6	6	5	2.5
497	3	2	2	4	4	3	3	4	5	4	5	6	2.5
498	2	2	2	1	4	4	3	5	4	5	6	6	2.5
499	2	1	3	1	3	3	3	3	4	3	3	3	2.5
500	2	2	4	1	2	4	3	3	4	3	3	3	2.5
501	3	1	3	2	3	3	1	4	5	4	6	6	2.5
502	1	1	4	1	2	3	1	4	4	6	5	5	2.5
503	2	2	4	1	2	3	3	4	5	5	6	5	2.5
504	2	2	2	1	1	3	1	3	4	6	6	6	2.5
505	3	2	4	4	4	2	3	3	4	3	3	3	2.5
506	2	2	1	1	1	2	3	3	3	4	4	3	2.5
507	2	1	3	2	3	2	1	4	4	5	5	6	2.5
508	2	1	1	2	4	1	3	2	5	4	4	5	2.5
509	2	2	1	1	1	3	3	3	4	3	3	3	2.5
510	2	2	1	2	1	3	3	3	4	3	3	3	2.5
511	3	2	2	2	3	4	1	5	5	5	6	6	2.5
512	3	2	1	1	1	4	1	5	5	6	5	6	2.5
513	2	2	1	1	1	3	1	6	6	6	6	6	2.5
514	2	2	1	1	1	4	3	3	4	3	3	3	2.5
515	2	1	2	1	1	4	3	3	3	4	3	3	2.5
516	3	2	1	1	1	2	4	2	4	4	3	4	2.5
517	1	2	4	1	2	4	4	3	3	4	2	2	2.5
518	2	1	2	1	1	3	1	5	2	3	5	5	2.5
519	3	2	2	1	1	2	4	2	3	4	3	4	2.5
520	2	1	3	2	3	2	1	2	2	3	2	3	2.5
521	2	2	2	2	1	2	1	2	2	3	3	3	2.5
522	2	1	1	1	1	4	1	5	4	5	5	5	2.5

Id	Age	Gender	Job	Frequency	Purpose	Length	Time	Comfort	Safety	Surface Condition	Zebra Crossing	PLOS	Side walk width
523	2	1	1	1	4	2	1	6	2	6	5	6	2.5
524	2	2	1	1	1	4	3	3	4	3	3	3	2.5
525	2	1	2	1	1	4	3	3	4	3	3	3	2.5
526	3	2	1	1	1	2	4	2	4	3	3	4	2.5
527	1	2	4	1	2	4	4	3	2	3	2	2	2.5
528	2	1	2	1	1	3	1	5	2	5	5	5	2.5
529	3	2	2	1	1	2	4	2	3	4	3	4	2.5
530	2	1	3	2	3	2	1	2	2	2	2	3	2.5
531	2	2	2	2	1	2	1	2	2	2	3	3	2.5
532	2	1	1	1	1	4	1	5	5	6	5	5	2.5
533	2	1	1	1	4	2	1	6	4	6	5	6	2.5
534	3	1	3	2	4	3	1	6	5	6	5	6	0.5
535	2	1	3	2	3	2	2	5	5	6	5	6	0.5
536	2	1	3	2	3	2	2	5	5	6	5	6	0.5
537	2	1	3	2	3	2	2	4	5	6	5	6	0.5
538	2	1	3	2	3	2	2	4	5	6	5	6	0.5
539	2	1	3	2	3	2	2	4	5	6	5	6	0.5
540	2	1	3	2	3	2	2	4	5	6	5	6	0.5
541	2	1	3	2	3	2	2	4	5	5	5	6	0.5
542	2	1	3	2	3	2	2	4	6	5	6	6	0.5
543	3	1	3	2	4	3	1	4	6	5	5	6	0.5
544	2	1	3	2	3	2	2	5	5	4	5	6	0.5
545	2	1	3	2	3	2	2	5	5	4	5	6	0.5
546	3	2	2	1	1	2	1	6	6	4	5	6	0.5
547	3	2	1	1	2	3	1	6	6	4	5	6	0.5
548	2	2	4	1	2	2	1	6	6	5	5	6	0.5
549	2	1	3	1	3	1	1	6	6	5	5	6	0.5
550	2	1	1	3	4	4	3	5	6	4	5	6	0.5
551	3	2	2	1	1	2	2	5	6	4	5	6	0.5
552	2	2	2	1	4	2	3	5	6	4	5	6	0.5
553	2	2	2	1	3	4	1	5	5	5	5	5	0.5
554	2	2	1	1	2	3	3	5	6	5	5	6	0.5
555	2	2	2	1	1	4	1	5	6	5	5	6	0.5
556	3	2	2	1	1	4	1	5	6	5	5	6	0.5
557	2	2	2	1	1	1	1	2	3	2	2	3	2.5

Id	Age	Gender	Job	Frequency	Purpose	Length	Time	Comfort	Safety	Surface Condition	Zebra Crossing	PLOS	Side walk width
558	2	1	1	1	1	3	1	3	4	5	4	4	2.5
559	2	2	1	1	1	2	1	3	2	5	3	4	2.5
560	3	1	3	2	3	2	1	5	5	6	6	5	2.5
561	3	2	2	4	4	3	3	4	5	6	5	6	2.5
562	2	2	2	1	4	4	3	5	4	5	6	6	2.5
563	2	1	3	1	3	3	3	3	3	4	3	3	2.5
564	2	2	4	1	2	4	3	3	3	4	3	3	2.5
565	3	1	3	2	3	3	1	4	4	6	6	6	2.5
566	1	1	4	1	2	3	1	4	4	6	5	5	2.5
567	2	2	4	1	2	3	3	4	4	5	6	5	2.5
568	2	2	2	1	1	3	1	3	2	6	6	6	2.5
569	3	2	4	4	4	2	3	3	3	4	3	3	2.5
570	2	2	1	1	1	2	3	3	3	4	3	3	2.5
571	2	1	3	2	3	2	1	4	4	5	5	6	2.5
572	2	1	1	2	4	1	3	3	4	5	4	5	2.5
573	2	2	1	1	1	3	3	3	3	4	3	3	2.5
574	2	2	1	2	1	3	3	3	3	4	4	3	2.5
575	3	2	2	2	3	4	1	5	5	6	6	6	2.5
576	3	2	1	1	1	4	1	5	5	6	5	6	2.5
577	2	2	1	1	1	3	1	6	6	6	6	6	2.5
578	2	2	1	1	1	4	3	3	3	4	3	3	2.5
579	2	1	2	1	1	4	3	3	3	4	4	3	2.5
580	3	2	1	1	1	2	4	2	3	4	3	4	2.5
581	1	2	4	1	2	4	4	3	3	4	2	2	2.5
582	2	1	2	1	1	3	1	4	2	5	5	5	2.5
583	3	2	2	1	1	2	4	2	3	4	3	4	2.5
584	2	1	3	2	3	2	1	2	2	3	2	3	2.5
585	2	2	2	2	1	2	1	2	2	3	3	3	2.5
586	2	1	1	1	1	4	1	4	4	5	5	5	2.5
587	2	1	1	1	4	2	1	6	2	6	5	6	2.5
588	2	2	1	1	1	4	3	3	4	3	3	3	2.5
589	2	1	2	1	1	4	3	3	3	4	3	3	2.5
590	3	2	1	1	1	2	4	2	3	4	3	4	2.5
591	1	2	4	1	2	4	4	3	3	3	2	2	2.5
592	2	1	2	1	1	3	1	5	2	4	5	5	2.5

Id	Age	Gender	Job	Frequency	Purpose	Length	Time	Comfort	Safety	Surface Condition	Zebra Crossing	PLOS	Side walk width
593	3	2	2	1	1	2	4	2	3	4	3	4	2.5
594	2	1	3	2	3	2	1	2	2	3	2	3	2.5
595	2	2	2	2	1	2	1	2	2	3	3	3	2.5
596	2	1	1	1	1	4	1	5	4	5	5	5	2.5
597	2	1	1	1	4	2	1	6	2	6	5	6	2.5
598	3	1	3	2	4	3	1	6	6	5	5	6	0.5
599	2	1	3	2	3	2	2	5	5	6	5	6	0.5
600	2	1	3	2	3	2	2	5	5	6	5	6	0.5
601	2	1	3	2	3	2	2	4	5	5	4	6	0.5
602	2	1	3	2	3	2	2	4	5	5	4	6	0.5
603	2	1	3	2	3	2	2	4	5	6	4	6	0.5
604	2	1	3	2	3	2	2	4	5	5	4	6	0.5
605	2	1	3	2	3	2	2	4	5	6	4	6	0.5
606	2	1	3	2	3	2	2	4	6	6	6	6	0.5
607	3	1	3	2	4	3	1	4	6	6	5	6	0.5
608	2	1	3	2	3	2	2	5	5	5	5	6	0.5
609	2	1	3	2	3	2	2	5	5	6	5	6	0.5
610	3	2	2	1	1	2	1	6	6	6	5	6	0.5
611	3	2	1	1	2	3	1	6	6	6	5	6	0.5
612	2	2	4	1	2	2	1	6	6	6	5	6	0.5
613	2	1	3	1	3	1	1	6	6	6	5	6	0.5
614	2	1	1	3	4	4	3	5	6	6	5	6	0.5
615	3	2	2	1	1	2	2	5	6	6	5	6	0.5
616	2	2	2	1	4	2	3	5	6	6	5	6	0.5
617	2	2	2	1	3	4	1	5	5	6	5	5	0.5
618	2	2	1	1	2	3	3	5	6	6	5	6	0.5
619	2	2	2	1	1	4	1	5	6	6	5	6	0.5
620	3	2	2	1	1	4	1	5	6	6	5	6	0.5
621	2	2	2	1	1	1	1	2	3	2	2	3	2.5
622	2	1	1	1	1	3	1	3	4	5	4	4	2.5
623	2	2	1	1	1	2	1	3	2	5	3	4	2.5
624	3	1	3	2	3	2	1	5	3	6	6	5	2.5
625	3	2	2	4	4	3	3	4	3	5	5	6	2.5
626	2	2	2	1	4	4	3	5	4	5	6	6	2.5
627	2	1	3	1	3	3	3	3	3	4	3	3	2.5

Id	Age	Gender	Job	Frequency	Purpose	Length	Time	Comfort	Safety	Surface Condition	Zebra Crossing	PLOS	Side walk width
628	2	2	4	1	2	4	3	3	3	4	3	3	2.5
629	3	1	3	2	3	3	1	4	3	6	6	6	2.5
630	1	1	4	1	2	3	1	4	3	6	5	5	2.5
631	2	2	4	1	2	3	3	4	3	5	6	5	2.5
632	2	2	2	1	1	3	1	3	4	6	6	6	2.5
633	3	2	4	4	4	1	3	3	3	4	3	3	2.5
634	2	2	1	1	1	2	3	3	3	4	3	3	2.5
635	2	1	3	2	3	2	1	4	3	5	5	6	2.5
636	2	1	1	2	4	1	3	2	4	5	3	5	2.5
637	2	2	1	1	1	3	3	3	3	4	3	3	2.5
638	2	2	1	2	1	3	3	3	3	4	3	3	2.5
639	3	2	2	2	3	4	1	5	5	5	6	6	2.5
640	3	2	1	1	1	4	1	5	5	6	5	6	2.5
641	2	2	1	1	1	3	1	6	6	6	6	6	2.5
642	2	2	1	1	1	4	3	3	4	3	3	3	2.5
643	2	1	2	1	1	4	3	3	4	3	3	3	2.5
644	3	2	1	1	1	2	4	2	4	3	3	4	2.5
645	1	2	4	1	2	4	4	3	3	4	2	2	2.5
646	2	1	2	1	1	3	1	5	2	5	5	5	2.5
647	3	2	2	1	1	2	4	2	3	4	3	4	2.5
648	2	1	3	2	3	2	1	2	2	3	2	3	2.5
649	2	2	2	2	1	2	1	2	2	3	3	3	2.5
650	2	1	1	1	1	4	1	5	5	5	5	5	2.5
651	2	1	1	1	4	2	1	6	2	6	5	6	2.5
652	2	2	1	1	1	4	3	3	4	3	3	3	2.5
653	2	1	2	1	1	4	3	3	4	3	3	3	2.5
654	3	2	1	1	1	2	4	2	4	3	3	4	2.5
655	1	2	4	1	2	4	4	3	3	4	2	2	2.5
656	2	1	2	1	1	3	1	5	2	5	5	5	2.5
657	3	2	2	1	1	2	4	2	3	4	3	4	2.5
658	2	1	3	2	3	2	1	2	2	3	2	3	2.5
659	2	2	2	2	1	2	1	2	2	3	3	3	2.5
660	2	1	1	1	1	4	1	5	5	5	5	5	2.5
661	2	1	1	1	4	2	1	6	2	6	5	6	2.5
662	3	1	3	2	4	3	1	6	6	6	5	6	0.5

Id	Age	Gender	Job	Frequency	Purpose	Length	Time	Comfort	Safety	Surface Condition	Zebra Crossing	PLOS	Side walk width
663	2	1	3	2	3	2	2	5	5	6	5	6	0.5
664	2	1	3	2	3	2	2	5	5	6	6	6	0.5
665	2	1	3	2	3	2	2	5	5	5	6	6	0.5
666	2	1	3	2	3	2	2	5	5	6	6	6	0.5
667	2	1	3	2	3	2	2	5	5	6	6	6	0.5
668	2	1	3	2	3	2	2	4	5	6	6	6	0.5
669	2	1	3	2	3	2	2	4	5	6	6	6	0.5
670	2	1	3	2	3	2	2	4	6	5	6	6	0.5
671	3	1	3	2	4	3	1	4	6	5	5	6	0.5
672	2	1	3	2	3	2	2	5	5	5	5	6	0.5
673	2	1	3	2	3	2	2	5	5	5	5	6	0.5
674	3	2	2	1	1	2	1	6	6	6	5	6	0.5
675	3	2	1	1	2	3	1	6	6	6	5	6	0.5
676	2	2	4	1	2	2	1	6	6	5	5	6	0.5
677	2	1	3	1	3	1	1	6	6	5	5	6	0.5
678	2	1	1	3	4	4	3	5	6	6	5	6	0.5
679	3	2	2	1	1	2	2	5	6	6	5	6	0.5
680	2	2	2	1	4	2	3	5	6	6	5	6	0.5
681	2	2	2	1	3	4	1	5	5	5	5	5	0.5
682	2	2	1	1	2	3	3	5	6	6	5	6	0.5
683	2	2	2	1	1	4	1	5	6	6	5	6	0.5
684	3	2	2	1	1	4	1	5	6	6	5	6	0.5
685	2	2	2	1	1	1	1	2	2	3	2	3	2.5
686	2	1	1	1	1	3	1	3	4	5	4	4	2.5
687	2	2	1	1	1	2	1	3	2	4	3	4	2.5
688	3	1	3	2	3	2	1	5	5	5	6	5	2.5
689	3	2	2	4	4	3	3	4	5	5	5	6	2.5
690	2	2	2	1	4	4	3	5	4	5	6	6	2.5
691	2	1	3	1	3	3	3	3	4	3	3	3	2.5
692	2	2	4	1	2	4	3	3	3	4	3	3	2.5
693	3	1	3	2	3	3	1	4	5	4	6	6	2.5
694	1	1	4	1	2	3	1	4	4	6	5	5	2.5
695	2	2	4	1	2	3	3	4	5	5	6	5	2.5
696	2	2	2	1	1	3	1	3	1	6	6	6	2.5
697	3	2	4	4	4	2	3	3	4	3	3	3	2.5

Id	Age	Gender	Job	Frequency	Purpose	Length	Time	Comfort	Safety	Surface Condition	Zebra Crossing	PLOS	Side walk width
698	2	2	1	1	1	2	3	3	4	3	3	3	2.5
699	2	1	3	2	3	2	1	4	4	5	5	6	2.5
700	2	1	1	2	4	1	3	3	3	5	3	5	2.5
701	2	2	1	1	1	3	3	3	4	3	3	3	2.5
702	2	2	1	2	1	3	3	3	4	3	3	3	2.5
703	3	2	2	2	3	4	1	5	5	5	6	6	2.5
704	3	2	1	1	1	4	1	5	5	6	5	6	2.5
705	2	2	1	1	1	3	1	6	6	6	6	6	2.5
706	2	2	1	1	1	4	3	3	3	3	4	3	2.5
707	2	1	2	1	1	4	3	3	3	4	3	3	2.5
708	3	2	1	1	1	2	4	2	4	3	3	4	2.5
709	1	2	4	1	2	4	4	3	3	4	2	2	2.5
710	2	1	2	1	1	3	1	5	2	5	5	5	2.5
711	3	2	2	1	1	2	4	2	3	4	3	4	2.5
712	2	1	3	2	3	2	1	2	2	3	2	3	2.5
713	2	2	2	2	1	2	1	2	2	2	3	3	2.5
714	2	1	1	1	1	4	1	5	5	5	5	5	2.5
715	2	1	1	1	4	2	1	6	2	6	5	6	2.5
716	2	2	1	1	1	4	3	3	4	3	3	3	2.5
717	2	1	2	1	1	4	3	3	4	3	3	3	2.5
718	3	2	1	1	1	2	4	2	4	3	3	4	2.5
719	1	2	4	1	2	4	4	3	3	4	2	2	2.5
720	2	1	2	1	1	3	1	5	2	5	5	5	2.5
721	3	2	2	1	1	2	4	2	3	4	3	4	2.5
722	2	1	3	2	3	2	1	2	2	4	2	3	2.5
723	2	2	2	2	1	2	1	2	2	2	3	3	2.5
724	2	1	1	1	1	4	1	5	4	5	5	5	2.5
725	2	1	1	1	4	2	1	6	2	6	5	6	2.5
726	3	1	3	2	4	3	1	6	5	5	5	6	0.5
727	2	1	3	2	3	2	2	5	5	6	5	6	0.5
728	2	1	3	2	3	2	2	5	5	6	5	6	0.5
729	2	1	3	2	3	2	2	5	5	6	5	6	0.5
730	2	1	3	2	3	2	2	5	5	6	5	6	0.5
731	2	1	3	2	3	2	2	5	5	6	5	6	0.5
732	2	1	3	2	3	2	2	4	5	6	5	6	0.5

Id	Age	Gender	Job	Frequency	Purpose	Length	Time	Comfort	Safety	Surface Condition	Zebra Crossing	PLOS	Side walk width
733	2	1	3	2	3	2	2	5	5	6	5	6	0.5
734	2	1	3	2	3	2	2	5	5	5	6	6	0.5
735	3	1	3	2	4	3	1	5	6	5	5	6	0.5
736	2	1	3	2	3	2	2	5	5	5	5	6	0.5
737	2	1	3	2	3	2	2	5	5	6	5	6	0.5
738	3	2	2	1	1	2	1	6	6	6	5	6	0.5
739	3	2	1	1	2	3	1	6	6	6	5	6	0.5
740	2	2	4	1	2	2	1	6	6	6	5	6	0.5
741	2	1	3	1	3	1	1	6	6	6	5	6	0.5
742	2	1	1	3	4	4	3	5	6	6	5	6	0.5
743	3	2	2	1	1	2	2	5	6	6	5	6	0.5
744	2	2	2	1	4	2	3	5	6	6	5	6	0.5
745	2	2	2	1	3	4	1	5	5	5	5	5	0.5
746	2	2	1	1	2	3	3	5	6	6	5	6	0.5
747	2	2	2	1	1	4	1	5	6	6	5	6	0.5
748	3	2	2	1	1	4	1	5	6	5	5	6	0.5
749	2	2	2	1	1	1	1	2	3	2	2	3	2.5
750	2	1	1	1	1	3	1	3	4	5	4	4	2.5
751	2	2	1	1	1	2	1	3	2	4	3	4	2.5
752	3	1	3	2	3	2	1	5	5	6	6	5	2.5
753	3	2	2	4	4	3	3	4	5	5	5	6	2.5
754	2	2	2	1	4	4	3	5	4	5	6	6	2.5
755	2	1	3	1	3	3	3	3	3	4	3	3	2.5
756	2	2	4	1	2	4	3	3	4	3	3	3	2.5
757	3	1	3	2	3	3	1	4	5	4	6	6	2.5
758	1	1	4	1	2	3	1	4	4	6	5	5	2.5
759	2	2	4	1	2	3	3	4	5	5	6	5	2.5
760	2	2	2	1	1	3	1	3	5	6	6	6	2.5
761	3	2	4	4	4	2	3	3	4	3	3	3	2.5
762	2	2	1	1	1	2	3	3	3	4	3	3	2.5
763	2	1	3	2	3	2	1	4	4	5	5	6	2.5
764	2	1	1	2	4	1	3	2	5	5	3	5	2.5
765	2	2	1	1	1	3	3	3	4	4	3	3	2.5
766	2	2	1	2	1	3	3	3	3	4	3	3	2.5
767	3	2	2	2	3	4	1	5	5	6	6	6	2.5

Id	Age	Gender	Job	Frequency	Purpose	Length	Time	Comfort	Safety	Surface Condition	Zebra Crossing	PLOS	Side walk width
768	3	2	1	1	1	4	1	5	5	6	5	6	2.5
769	2	2	1	1	1	3	1	6	6	6	6	6	2.5
770	2	2	1	1	1	4	3	3	4	3	3	3	2.5
771	2	1	2	1	1	4	3	3	3	4	3	3	2.5
772	3	2	1	1	1	2	4	2	4	3	3	4	2.5
773	1	2	4	1	2	4	4	3	3	4	2	2	2.5
774	2	1	2	1	1	3	1	5	2	5	5	5	2.5
775	3	2	2	1	1	2	4	2	3	4	3	4	2.5
776	2	1	3	2	3	2	1	2	2	2	2	3	2.5
777	2	2	2	2	1	2	1	2	2	3	3	3	2.5
778	2	1	1	1	1	4	1	5	5	5	5	5	2.5
779	2	1	1	1	4	2	1	6	4	6	5	6	2.5
780	2	2	1	1	1	4	3	3	4	3	3	3	2.5
781	2	1	2	1	1	4	3	3	3	4	3	3	2.5
782	3	2	1	1	1	2	4	2	4	3	3	4	2.5
783	1	2	4	1	2	4	4	3	3	4	2	2	2.5
784	2	1	2	1	1	3	1	5	2	5	5	5	2.5
785	3	2	2	1	1	2	4	2	3	4	3	4	2.5
786	2	1	3	2	3	2	1	2	2	2	2	3	2.5
787	2	2	2	2	1	2	1	2	2	3	3	3	2.5
788	2	1	1	1	1	4	1	5	5	5	5	5	2.5
789	2	1	1	1	4	2	1	6	2	6	5	6	2.5
790	3	1	3	2	4	3	1	6	6	6	5	6	0.5
791	2	1	3	2	3	2	2	5	5	6	5	6	0.5
792	2	1	3	2	3	2	2	5	5	6	5	6	0.5
793	2	1	3	2	3	2	2	4	5	6	4	6	0.5
794	2	1	3	2	3	2	2	4	5	5	4	6	0.5
795	2	1	3	2	3	2	2	4	5	6	4	6	0.5
796	2	1	3	2	3	2	2	4	5	5	4	6	0.5
797	2	1	3	2	3	2	2	4	5	6	4	6	0.5
798	2	1	3	2	3	2	2	4	6	5	6	6	0.5
799	3	1	3	2	4	3	1	4	6	6	5	6	0.5
800	2	1	3	2	3	2	2	5	5	6	5	6	0.5
801	2	1	3	2	3	2	2	5	5	6	5	6	0.5
802	3	2	2	1	1	2	1	6	6	6	5	6	0.5

Id	Age	Gender	Job	Frequency	Purpose	Length	Time	Comfort	Safety	Surface Condition	Zebra Crossing	PLOS	Side walk width
803	3	2	1	1	2	3	1	6	6	6	5	6	0.5
804	2	2	4	1	2	2	1	6	6	6	5	6	0.5
805	2	1	3	1	3	1	1	6	6	5	5	6	0.5
806	2	1	1	3	4	4	3	5	6	6	5	6	0.5
807	3	2	2	1	1	2	2	5	6	6	5	6	0.5
808	2	2	2	1	4	2	3	5	6	6	5	6	0.5
809	2	2	2	1	3	4	1	5	5	6	5	5	0.5
810	2	2	1	1	2	3	3	5	6	5	5	6	0.5
811	2	2	2	1	1	4	1	5	6	6	5	6	0.5
812	3	2	2	1	1	4	1	5	6	5	5	6	0.5
813	2	2	2	1	1	1	1	2	2	3	3	3	2.5
814	2	1	1	1	1	3	1	3	4	5	4	4	2.5
815	2	2	1	1	1	2	1	3	2	5	3	4	2.5
816	3	1	3	2	3	2	1	5	5	6	6	5	2.5
817	3	2	2	4	4	3	3	4	5	5	5	6	2.5
818	2	2	2	1	4	4	3	5	4	5	6	6	2.5
819	2	1	3	1	3	3	3	3	2	3	3	3	2.5
820	2	2	4	1	2	4	3	3	2	3	3	3	2.5
821	3	1	3	2	3	3	1	4	5	4	6	6	2.5
822	1	1	4	1	2	3	1	4	4	6	5	5	2.5
823	2	2	4	1	2	3	3	4	5	5	6	5	2.5
824	2	2	2	1	1	3	1	4	5	6	6	6	2.5
825	3	2	4	4	4	2	3	3	4	3	3	3	2.5
826	2	2	1	1	1	2	3	3	3	4	3	3	2.5
827	2	1	3	2	3	2	1	4	4	5	5	6	2.5
828	2	1	1	2	4	1	3	2	5	5	3	5	2.5
829	2	2	1	1	1	3	3	3	3	3	3	3	2.5
830	2	2	1	2	1	3	3	3	3	4	3	3	2.5
831	3	2	2	2	3	4	1	5	4	5	6	6	2.5
832	3	2	1	1	1	4	1	5	5	6	5	6	2.5
833	2	2	1	1	1	3	1	6	5	6	6	6	2.5
834	2	2	1	1	1	4	3	3	4	3	3	3	2.5
835	2	1	2	1	1	4	3	3	4	3	3	3	2.5
836	3	2	1	1	1	2	4	2	4	3	3	4	2.5
837	1	2	4	1	2	4	4	3	3	4	2	2	2.5

Id	Age	Gender	Job	Frequency	Purpose	Length	Time	Comfort	Safety	Surface Condition	Zebra Crossing	PLOS	Side walk width
838	2	1	2	1	1	3	1	5	2	5	5	5	2.5
839	3	2	2	1	1	2	4	2	3	4	3	4	2.5
840	2	1	3	2	3	2	1	2	2	2	2	3	2.5
841	2	2	2	2	1	2	1	2	2	2	3	3	2.5
842	2	1	1	1	1	4	1	5	5	5	5	5	2.5
843	2	1	1	1	4	2	1	6	2	6	5	6	2.5
844	2	2	1	1	1	4	3	3	4	3	3	3	2.5
845	2	1	2	1	1	4	3	3	4	3	3	3	2.5
846	3	2	1	1	1	2	4	2	4	3	3	4	2.5
847	1	2	4	1	2	4	4	3	3	4	2	2	2.5
848	2	1	2	1	1	3	1	5	2	5	5	5	2.5
849	3	2	2	1	1	2	4	2	3	4	3	4	2.5
850	2	1	3	2	3	2	1	2	2	2	2	3	2.5
851	2	2	2	2	1	2	1	2	2	2	3	3	2.5
852	2	1	1	1	1	4	1	5	5	5	5	5	2.5
853	2	1	1	1	4	2	1	6	2	6	5	6	2.5
854	3	2	1	1	1	2	4	2	4	3	3	4	2.5
855	1	2	4	1	2	4	4	3	3	4	2	2	2.5
856	2	1	2	1	1	3	1	5	2	5	5	5	2.5
857	3	2	2	1	1	2	4	2	3	4	3	4	2.5
858	2	1	3	2	3	2	1	2	2	2	2	3	2.5
859	2	2	2	2	1	2	1	2	2	2	3	3	2.5
860	2	1	1	1	1	4	1	5	5	5	5	5	2.5
861	2	1	1	1	4	2	1	6	2	6	5	6	2.5
862	2	2	4	1	2	4	3	3	4	3	3	3	2.5
863	3	1	3	2	3	3	1	4	5	4	6	6	2.5
864	1	1	4	1	2	3	1	4	4	6	5	5	2.5
865	2	2	4	1	2	3	3	4	5	5	6	5	2.5
866	2	2	2	1	1	3	1	3	1	6	6	6	2.5
867	3	2	4	4	4		3	3	4	3	3	3	2.5
868	2	2	1	1	1	2	3	3	2	3	3	3	2.5
869	2	1	3	2	3	2	1	4	4	6	5	6	2.5
870	2	1	1	3	4	4	3	5	5	5	6	6	0.5
871	3	2	2	1	1	2	2	5	5	6	6	6	0.5
872	2	2	2	1	4	2	3	5	6	6	6	6	0.5

Id	Age	Gender	Job	Frequency	Purpose	Length	Time	Comfort	Safety	Surface Condition	Zebra Crossing	PLOS	Side walk width
873	2	2	2	1	3	4	1	5	5	6	5	5	0.5
874	2	2	1	1	2	3	3	5	6	6	6	6	0.5
875	2	2	2	1	1	4	1	5	5	6	5	6	0.5
876	3	2	2	1	1	4	1	5	6	6	6	6	0.5