

Supplementary Table

Table 1: Summary of Reviewed Articles

	Article Title	Journal	Year	Media Used	Design Characteristics Analyzed	Image Generation and Guidance Protocols	Validation	Repository Image Links
1	Video Simulation of Pedestrian Crossings at Signalized Intersections	Transportation Research Record	2005	Video (first-person perspective)	Right turn on red, permitted left turns, perpendicular traffic volume, perpendicular traffic speed, number of lanes crossed, pedestrian delay, right turn channelization islands	The paper provides detailed protocols for ensuring that the videos are similarly produced. Videographers were instructed on what perspective to include. Videos were shown to a focus group for initial feedback. Transitions were added for each video. Sound was calibrated for each video.	Comparison of in-person and video survey results.	No images available
2	Implication of pedestrians' stated preference of certain attributes of crosswalks	Transport Policy	2014	In Situ	Traffic controls at crosswalks, raised crosswalks, median types.	Focus on collecting responses through direct interactions and verbal feedback from participants.	No	No images available
3	Pedestrian preferences with respect to roundabouts	Accident Analysis & Prevention	2014	Simulated videos (VISSIM).	Signs, pedestrian crossing position, traffic volume, traffic speed, pedestrian volume, number of lanes, presence of a pedestrian island, flashing signs.	Videos created in VISSIM microsimulation tool. Little protocol detail provided.	No	No images available
4	Pedestrian level of service at signalized intersections in China using contingent field survey and pedestrian crossing video simulation	TRB Conference 2014	2014	Videos	Crossing distance, refuge islands, cyclists' presence, pedestrian signals, conflicts with turning vehicles, vehicle speeds	Three cameras filmed at the same time with left, right, and forward first-person perspectives at eye level. Sound matching to real volume. Evaluated with Face Validity question 1-5.	Questions on face validity of videos	Link to images
5	Modelling for walkability: understanding pedestrian preferences in Singapore	IATBR	2015	Illustrations	Traffic, greenery, Active Frontage, Rain Cover, Traffic Lights, Overpasses, Jaywalk, Underpass, Weather	No image generation protocols provided.	No	Link to images

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6	How do pedestrians balance safety, walking time, and the utility of crossing the road? A stated preference study	Transportation Research	2016	Illustrations, text.	Number of lanes in each direction, presence of median, traffic speed and density, walk time.	Very little description of participant recruitment or interface. Assuming that these were in-person interviews based upon the use of the term "interview" once in the document.	No	No images available
7	Eye-tracking technology, visual preference surveys, and urban design	Journal of Urbanism	2017	Photos.	Cars and parking, advertisements, buildings, nature, basic street elements, basic sidewalk elements, decorative sidewalk elements, and people.	Eye tracking employed. Participants rated 20 images on a scale from -10 to 10. Eye tracking system collects data on eye movements.	No	Link to images
8	Estimating preferences for different types of pedestrian crossing facilities	Transportation Research	2018	Illustrations.	Crossing facilities like straight signalized vs staggered signalized crossings. Foot bridges and underpasses.	Participants asked to rate crossings between 0-100 with ends benchmarked by visual references.	No	No images available
9	Seeing the city: using eye-tracking technology to explore cognitive responses to the built environment	Journal of Urbanism	2019	Photos (manipulated).	Cognitive architecture scorecard: Edges, facades, patterns, shapes, narrative, biophilia.	Showed 20 photo images of urban scenes to 18 students. Asked Likert-scale (7) questions about how likely to spend time in the space and how relaxed they feel in the space. Used eye-tracking device.	No	No images available
10	A comprehensive approach for the appraisal of the barrier effect of roads on pedestrians	Transportation Research Part A	2020	Illustrations, photos, short videos, and text.	Number of lanes, median, traffic density, traffic speed, nighttime conditions.	Interviews conducted face-to-face. Three stated preference exercises. Asked if able to evaluate scenarios. Shown an illustration of the road and short videos with vehicle speeds (interactive to ensure participant understanding). Options include illustrations and verbal descriptions. Exercise designed to remove non-trading behavior.	No	Link to images

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11	On the use of virtual immersive reality for discrete choice experiments to modelling pedestrian behaviour	Journal of Choice Modelings	2020	Virtual Reality	Pedestrian crossings. Distance to pedestrian facilities, number of pedestrians, traffic counts, number of lanes, time of day. Crossing type: direct crossing, signalized crossing, and pedestrian bridge.	Comparison of VR with text and images. Built VR scenarios with Unity Gaming Engine. Each individual experienced both survey formats, with order of presentation random. 12Participants needed some real time guidance from interviewer and assistant.	No	No images available
12	Evaluating pedestrian perceptions of street design with a 3D state preference survey	Environment and Planning B	2020	Simulated videos (Unity)	Street and sidewalk characteristics (exclude building and land use characteristics). Through lanes, curb lanes, sidewalk width, trees, on-street parking.	Buildings kept as constant, neutral as possible. Created a digital 3D twin, then brought into Unity game engine where moving entities can be added to create a real-life experience. Scenarios are dynamic from the viewpoint of a moving pedestrian. Added text to draw attention to differences. Respondents asked a confidence in decision question.	Yes, participants asked a confidence in response question	Link to images
13	An assessment of ecological validity of immersive videos in stated preference surveys	Journal of Choice Modelings	2020	Photos, Virtual Reality, and In-Situ	Psychometric evaluation of built environment quality and perceptions of safety and utility.	Homogenous lighting and temperature conditions. VR videos that lasted 7 minutes. Used a Samsung Gear 360 camera.	No	No images available
14	The impact of street characteristics on older pedestrians' perceived safety in Shanghai, China	Journal of Transport and Land Use	2020	Virtual Reality	Interface type, outer settings, steps, footpath width, pedestrian crowdedness, maintenance, tactile paving, pavers directions, isolation type, parking lot, non-motor vehicle, motor vehicle volume	No image generation protocols provided. A trained guide presented an introduction to each participant. Two reference scenarios used for comparison.	No	No images available

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15	A stated preference survey for evaluating young pedestrians preferences on walkways	Sustainability	2021	Photos.	Perceived degree of comfort for a pedestrian path. Width, pavement, equipment, and environment/context.	No image generation protocols provided.	No	No images available
16	A stated preference survey for evaluating pedestrians expectations on walkways	Transportation Research	2021	Photos and Text.	Width of the pedestrian path, pavement of the path, equipment present on path, environment for pedestrian path	No image generation protocols provided.	No	No images available
17	Perceived safety and pedestrian performance in pedestrian priority streets (PPSS) in Seoul, Korea: a virtual reality experiment and trace mapping	International Journal of Environmental Research and Public Health	2021	Virtual Reality.	Feeling of safety when a vehicle passes a pedestrian. Reasons for safety feelings.	Omnidirectional video based VR. Head mounted VR device. 20 second clips of videos with a vehicle passing a pedestrian on a back street.	No	No images available
18	Building safer public spaces: Exploring gender difference in the perception of safety in public space through urban design interventions	Landscape and Urban Planning	2021	Photos.	Three treatments examined: Graffiti removal, public toilets, and removal of walls.	Photos are altered to show images that are identical except for the treatment variables.	No	No images available
19	Measuring heterogeneous perception of urban space with massive data and machine learning: An application to safety	Landscape and Urban Planning	2021	Photos.	Presences of buildings, cars, fences, sidewalks, pedestrians, poles, signs, sky, road, and trees	Randomly gather street view images. Characterize each image based on its low-level features, semantic segmentation, and object detection.	No	No images available

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20	Communicating perceptions of pedestrian comfort and safety: Structural topic modeling of open response survey comments	Transportation Research Interdisciplinary Perspectives	2022	Video	Open-ended comments on pedestrian-vehicle and pedestrian-cyclist interactions	Videos of interactions at uncontrolled intersections during specified times of day. Videos focused on one direction of vehicle traffic at a time.	No	Link to images
21	Visual preference analysis and planning responses based on street view images: a case study of Gulangyu Island, China	Land	2022	Photos.	Green view index, sky openness, crowdeness, enclosure, and variety.	Total of 739 images were selected after filtering. Images were processed by an FCN model to extract visual features.	No	No images available
22	Pedestrians safety perception and crossing behaviors in narrow urban streets: An experimental study using immersive virtual reality technology	Accident Analysis & Prevention	2022	Virtual Reality.	Road type, barriers to visibility, geometric patterns, pavement markets, vehicle speed, lighting.	Each participant was exposed to 10 street crossing trials in VR which they then evaluated on a 1-10 scale for risk perception. Participants were given time to acquaint themselves with VR before the experiment. Both pre and post survey questionnaires. Participants actually crossed the street while in the VR experiment.	Following the experimental step, participants took off the headset and filled out a follow-up questionnaire to respond to the questions related to the degree of immersion in VE, whether environmental attributes are recognized, how the environmental factors influence their perceived risk,	Link to images

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23	Exploring pedestrian and cyclist preferences for shared space design: A video-based online survey	TRIP	2023	Simulated Videos (Unity).	Square and street design.	Simulated videos. 3d scenery is created in SketchUp then imported into Unity to simulate pedestrian and vehicle movements. Videos represent pedestrian and cyclists perspectives. Each video was 30-50 seconds long.	No	No images available
24	Pedestrian visual satisfaction and dissatisfaction toward physical components of the walking environment based on types, characteristics, and combinations	Building and Environment	2023	Photos.	Function, pedestrian path, road, safety, aesthetics, street condition, street view.	Participants were shown random images to rate their satisfaction and dissatisfaction. Physical components like trees, benches and road conditions were present in the images.	No	No images available
25	Urban perception by using eye movement data on street view images	Transactions in GIS	2024	Photos.	Wealthy, safe, lively, beautiful, boring, and depressing.	Gathered Streetview images every 100 meters. Pixel-level semantic segmentation on street view images. Each person views between 5-10 sets of 60 images. Eye tracker produced outcome variables of interest for each image.	No	No images available
26	Evaluating pedestrian preference of walkable streets using a stated preference survey	Thesis		Simulated Images.	Through lanes (car and transit), curb lanes, and sidewalk width and buffering.	The scenarios included combinations of sidewalk elements, curb lane activities and traffic configurations.	No	No images available
27	Assessing pedestrian safety perceptions in low-income cities	Transportation Research Part F	2025	Photos (manipulated).	Traffic volume, vehicle size, walking direction lateral clearance, sidewalk protection, crossing type, obstructions, adjacent environment	Used Generative Fill feature in Photoshop into real-world photos.	No	Link to images

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