Table S1. Basic characteristics of the included studies

First author (year)	Study area [scale] [a]	Study sample	Auditing tools [Method] [b]	Imagery used in the auditing tool [c]	Built environment attributes audited (reliability) [d]
Adams et al. (2022)	Phoenix, US [C]	Participants (n=512)	NEWS [CA]	GSV	• Sidewalks (%A=96.32%) • Sidewalk buffers (%A=94.88%) • Curb ramps (%A=96.31%) • Zebra crosswalks (%A=99.59%) • Line crosswalks (%A=97.55%) • Walk signals (%A=98.94%) • Bike symbols (%A=99.28%) • Street lights (%A=90.03%)
Adu-Brimpong et al. (2017)	Washington, US [C]	· Neighborhoods (n=82) · Streets segments (n=948)	ANC [VL]	GSV	· Land use types (Mean PABAK=0.88) · Public transit (Mean PABAK=0.88) · Street characteristic (Mean PABAK=0.88) · Quality of environment (Mean PABAK=0.88) · Sidewalk/walking/biking features (Mean PABAK=0.88)
Bader et al. (2015)	US [N]	Street segments (n=150)	CANVAS [VL]	GSV	· Land use types (F*k*=0.815, ICC=0.595) · Sidewalks (F*k*=0.760, ICC=0.854) · Buildings (F*k*=0.722, ICC=0.970) · Nature (F*k*=0.499, ICC=0.472) · Traffic design (F*k*=0.420, ICC=[0.898, 0.903]) · Disorder (F*k*=0.414) · Amenities (F*k*=0.420, ICC=[0.198, 0.291]) · Aesthetics and design (F*k*=0.359, ICC=[0.000, 0.868])

					· Pedestrian access (F*k*=0.215)
Bader et al. (2017)	Detroit, New York, Philadelphia, San Joes, US [C4]	Street segments (n=1, 915)	CANVAS [VL]	GSV	· Presence of litter · Presence of bottles · Presence of graffiti · Presence of abandoned cars · Presence of buildings in poor repair · Presence of burned-out buildings · Presence of abandoned buildings · Presence of bars on windows · Vacant land
Badland et al. (2010)	Auckland, New Zealand [C]	· Neighborhoods (n=4) · Street segments (n=48)	New Zealand SPACES [VL]	GSV	Walking function: ·Walking surface (ICC=0.95, *F*=2.97) · Neighborhood permeability (ICC=0.60, *F*=1.00) ·Walking infrastructure (ICC=0.94, *F*=8.00*) Walking Safety: · Streets (lanes) (ICC=1.00) · Fixed traffic controls (ICC=0.21, *F*=0.35) · Path safety (ICC=0.94, *F*=2.03) · Traffic safety (ICC=0.84, *F*=1.49) Walking Aesthetics: · Streetscape aesthetics (ICC=0.99, *F*=6.00*) · View aesthetics (ICC=1.00) · Subjective walking assessment (ICC=0.95, *F*=6.82) Walking Destinations: · Land use mix (ICC=0.62, *F*=0.52)

					Cycling function: ·Cycling surface (ICC=1.00, *F*=25.00**) · Neighborhood permeability (ICC=0.60, *F*=1.00) ·Cycling infrastructure (ICC=1.00) Cycling Safety: · Streets (lanes) (ICC=1.00) · Fixed traffic controls (ICC=0.76, *F*=5.54) · Traffic safety (ICC=0.77, *F*=1.41) Cycling Aesthetics: · Streetscape aesthetics (ICC=0.92, *F*=1.42) · View aesthetics (ICC=1.00) · Subjective cycling assessment (ICC=0.92, *F*=5.40) Cycling Destinations: · Land use mix (ICC=0.62, *F*=0.52)
Bartzokas-Tsiompras et al. (2021)	59 cities from 26 European countries [C59]	Street segments (n=112.577)	Miscroscale walkability audit tools based on MAPS [VL]	GSV	Street segments: · Commercial/Entertainment · Public park/Plaza · Public transit stops · Public seats · Streetlights · Building maintenance · Graffiti · Bike lanes · Presence of sidewalks · Sidewalk maintenance

					· Sidewalk buffers · Shading/Overhead coverage · Sidewalk width · Traffic character Crossing: · Pedestrian signals · Curb ramps · Marked crosswalks
Ben-Joseph et al. (2013)	Boston, US [C]	Street segments (n=84)	An analytic and a checklist audit tools [VL]	· BM · GM · GSV	· Land use types (C*k*=[-0.01, 1.00]) · Transportation environment (C*k*=[-0.36, 0.92]) · Facilities (C*k*=[-0.03, 0.49]) · Aesthetics (C*k*=[-0.01, 0.44]) · Signage (C*k*=[-0.10, 0.22]) · Social environment (C*k*=[-0.00, 0.08])
Bethlehem et al. (2014)	Urban agglomeration 'Randstad', the Netherlands [C]	· Neighborhoods (n=4) · Street segments (n=128)	S-VAT [VL]	GSV	· Walking related items (Mean C*k*=0.856) · Cycling related items (Mean C*k*=0.823) · Public transit (Mean C*k*=0.923) · Aesthetics (Mean C*k*=0.539) · Land use mix (Mean C*k*=0.740) · Grocery stores (Mean C*k*=0.681) · Food outlets (Mean C*k*=0.887) · Recreational facilities (Mean C*k*=0.527)
Bromm et al. (2020)	Pittsburgh, US [C]	· Neighborhoods (n=2)	BTG-COMP [VL]	· GSV · IFS	Land use: · Detached housing (C*k*: GSV=0.64, IFS=0.58; PABAK: GSV=0.65, IFS=0.60) · Institutional buildings (C*k*: GSV=0.69, IFS=0.54; PABAK: GSV=0.86, IFS=0.84)

		· Street segments (n=614)			· Broken or boarded windows (C*k*: GSV=0.56, IFS=0.45; PABAK: GSV=0.60, IFS=0.62) · Attached housing (C*k*: GSV=0.50, IFS=0.41; PABAK: GSV=0.66, IFS=0.70) · Trees that shade sidewalk (C*k*: GSV=0.31, IFS=0.37; PABAK: GSV=0.50, IFS=0.73) · Amount of street tress (C*k*: GSV=0.33, IFS=0.33; PABAK: GSV=0.39, IFS=0.45) · Bars on the windows (C*k*: GSV=0.43, IFS=0.26; PABAK: GSV=0.64, IFS=0.52) · Slope of the segment (C*k*: GSV=0.30, IFS=0.19; PABAK: GSV=0.75, IFS=0.63) · Vacant buildings or lots (C*k*: GSV=0.25, IFS=0.13; PABAK: GSV=0.35, IFS=0.38) · Housing apartments (C*k*: GSV=0.24, IFS=0.15; PABAK: GSV=0.62, IFS=0.63) Traffic and safety: · Stop signs (C*k*: GSV=0.89, IFS=0.85; PABAK: GSV=0.90, IFS=0.86) · Sidewalks (C*k*: GSV=0.76, IFS=0.83; PABAK: GSV=0.83, IFS=0.87) · Marked crosswalks (C*k*: GSV=0.78, IFS=0.83; PABAK: GSV=0.83, IFS=0.88) · Traffic lights (C*k*: GSV=0.92, IFS=0.75; PABAK: GSV=0.96, IFS=0.87) · Curb ramps (C*k*: GSV=0.45, IFS=0.68; PABAK: GSV=0.55, IFS=0.79) · Number of traffic lanes (C*k*: GSV=0.76, IFS=0.66; PABAK: GSV=0.81, IFS=0.73) · Street or sidewalk lights (C*k*: GSV=0.44, IFS=0.56; PABAK: GSV=0.57, IFS=0.69) · Continuous sidewalks (C*k*: GSV=0.72, IFS=0.43; PABAK: GSV=0.78, IFS=0.61) · Street and sidewalk buffers (C*k*: GSV=0.35, IFS=0.42; PABAK: GSV=0.51, IFS=0.63) · Continuous sidewalks on both ends (C*k*: GSV=0.63, IFS=0.38; PABAK: GSV=0.70, IFS=0.48) · Missing curb ramps at crossing (C*k*: GSV=0.06, IFS=-0.17; PABAK: GSV=0.66, IFS=0.30) Public amenities: · Bus stops (C*k*: GSV=0.84, IFS=0.79; PABAK: GSV=0.94, IFS=0.90) · Public trash can (C*k*: GSV=0.66, IFS=0.33; PABAK: GSV=0.86, IFS=0.67) · Perceived safety of segment (C*k*: GSV=-0.05, IFS=0.34; PABAK: GSV=0.11, IFS=0.30) · Overall condition of sidewalks (C*k*: GSV=0.08, IFS=0.29; PABAK: GSV=0.16, IFS=0.25)

					· Garden, flower bed, or planter (C*k*: GSV=0.39, IFS=0.34; PABAK: GSV=0.54, IFS=0.54) · Amount of trash on streets (C*k*: GSV=0.10, IFS=0.27; PABAK: GSV=0.13, IFS=0.40) · Attractiveness for walking (C*k*: GSV=0.04, IFS=0.14; PABAK: GSV=-0.09, IFS=0.21)
Brookfield and Tilley (2016)	Edinburgh, UK [C]	Older adults (n=19)	FASTVIEW [VL]	GSV	· Pavement width and obstructions · Pavement surface quality · Kerb paving quality · Road permeability · Way finding and legibility · Lights · Personal security · User conflict · Environment quality
Chen et al. (2016)	TaiPei, China [C]	Adolescents (n=1, 926)	Unvalidated tool [VL]	GSV	• Nut kiosks
Chen et al. (2022a)	264 cities, China [C264]	• Streets (n=769,407) • Locations (n=1,219,238)	Unvalidated tool [CA]	TSV	• Abandoned buildings (%A=84.1%) • Buildings with damaged facades (%A=53.4%) • Buildings with unkempt facades (%A=79.9%) • Graffiti/illegal advertisement (%A=80.7%) • Illegal/temporary buildings (%A=51.6%) • Stores with poor signboards (%A=74.6%) • Stores with poor facades (%A=59.8%) • Vacant and pending stores (%A=60.3%) • Messy and unmaintained greening (%A=81.8%) • Garbage/litter on streets (%A=82.4)

					• Construction fence remnants (%A=69.9%) • Broken roads (%A=80.5%) • Roads stacked with personal belongings (%A=67.6%) • Broken infrastructures (%A=81.0%) • Damaged public interfaces (%A=84.1%)
Chen et al. (2022b)	Shanghai, China [C]	Street segments (n=28,397)	Unvalidated tool [CA]	BSV	• Presence of greenery (*r*=0.94) • Presence of open sky (*r*=0.94) • Presence of buildings (*r*=0.94) • Presence of roadways (*r*=0.94) • Presence of sidewalks (*r*=0.94)
Christman et al. (2020)	New Jersey, US [C]	Neighborhoods (n=2, 224)	Unvalidated tool [VL]	GSV	· Sidewalks (AP≥0.7) · Neighborhood land use types (AP≥0.7) · Neighborhood aesthetics (AP≥0.7 except for garden: AP=0.63)
Chudyk et al. (2014)	Vancouver, Canada [C]	Street segments (n=48)	SWEAT-R [VL]	GSV	Functionality: · Building use (%A≥70%) · Sidewalks (%A≥70%) · Street features (%A≥70%) · Street life (%A≥70%) Safety (%A≥70%): · Presence of street lights · Presence of crosswalks Aesthetics (%A≥80%): · Visual appeal and quality of microscale urban design Destinations and facilities (%A≥80%):

					· Presence of public transit · Presence of gathering places
Clarke et al. (2010)	Chicago, US [C]	Street segments (n=244)	SSO [VL]	GSV	· Recreational facilities (%A=[92.3%, 97.0%], C*k*=[0.320, 0.573]) · Food environment (%A=[90.3%, 96.2%], C*k*=[0.064, 0.412]) · General land use (%A=[73.0%, 97.3%], C*k*=[0.305, 0.713]) · Commercial land use (%A=[95.8%, 98.7%], C*k*=[0.145, 0.394]) · Indicators of neighborhood social and physical disorder (%A=[34.7%, 92.7%], C*k*=[0.041, 0.339]) · Built environment characteristics (%A=[59.8%, 94.1%], C*k*=[0.032, 0.487])
Clarke and Gallagher (2013)	Detroit, US [C]	Older adults (n=1, 188)	SWEAT-R [VL]	GSV	· Sidewalks in place on both sides of the street · Continuous sidewalks · Smooth/flat/unbroken sidewalks · Free from obstructions · Wide enough to allow two people to pass comfortably · A public transit stop on the streets
Compernolle et al. (2016)	Ghent and suburbs, Paris and inner suburbs, Budapest and suburbs, the Randstad, Greater London, Europe [C5]	· Adult inhabitants (n=5, 205) · Neighborhoods (n=59) · Street segments (n=4, 486)	S-VAT [VL]	GSV	Objectively measured physical environmental neighborhood: · Safety (Cα=0.57) · Aesthetics (Cα=0.60) · Destination (Cα=0.79) · Functionality (Cα=0.66) Perceived physical environmental neighborhood: · Perceived safety (Cα=0.45) · Perceived aesthetics (Cα=0.64) · Perceived destination (Cα=0.77) · Perceived functionality (Cα=0.72)

Crawford et al. (2019)	Kentuchy, US [CT5]	· Census blocks (n=49) · Points (n=533)	Unvalidated tool [VL]	· GE · GSV	· Land use types (%A>18%) · Health care facilities (%A>83%) · Entertainment venues (%A>95%) · Businesses (%A>61%)
den Braver et al. (2020)	Ghent and suburbs, Paris and inner suburbs, Budapest and suburbs, the Randstad, Greater London, Europe [C5]	· Neighborhoods (n=60) · Participants (n=4, 528)	S-VAT [VL]	GSV	· Car road density · Residential density · Land-use mix · Traffic signal density · Parking supply
Feuillet et al. (2016)	Ghent and suburbs, Paris and inner suburbs, Budapest and suburbs, the Randstad, Greater London, Europe [C5]	· Neighborhoods (n=59) · Street segments (n=4, 486)	S-VAT [VL]	GSV	· Walking · Cycling · Public transit · Aesthetics · Land use mix · Grocery stores · Food outlets · Recreational facility-related items
Fox et al. (2021)	Melbourne (Australia), Ghent (Belgium),	· Routes (n=200)	MAPS [VL]	GSV	Positive destination & land use: · Residential use (ICC=0.47 [0.35, 0.57])

	Curitiba (Brazil), Hong Kong (China), and Valencia (Spain) [C5]	· Street segments (n=649) · Crossings (n=459)			· Shops (ICC=0.71 [0.68, 0.77]) · Restaurant-entertainment (ICC=0.64 [0.54, 0.71]) · Institutional-service (ICC=0.65 [0.56, 0.72]) · Worship (ICC=0.56 [0.46, 0.65]) · School (ICC=0.18 [0.04, 0.37]) · Public recreation (ICC=0.47 [0.35, 0.57]) · Private recreation (ICC=0.27 [0.14, 0.40]) · Pedestrian street (ICC=0.34 [0.21, 0.46]) Negative destination & land use: · Age-restricted bar or nightclub (ICC=0.04 [-0.10, 0.18]) · Liquor or alcohol store (ICC=0.16 [0.02, 0.29]) · Positive destination & land use (ICC=0.69 [0.60, 0.75]) · Negative destination & land use (ICC=0.06 [-0.08, 0.20]) Street characteristics: · Positive streetscape (ICC=0.66 [0.58, 0.73]) Aesthetics & social characteristics: · Positive aesthetics (ICC=0.09 [-0.05, 0.23]) · Negative aesthetics (ICC=0.16 [0.02, 0.30]) Positive crossing subscales: · Crosswalk amenities (ICC=0.85 [0.80, 0.88]) · Curb quality & presence (ICC=0.53 [0.41, 0.62]) · Intersection controls & signage (ICC=0.82 [0.77, 87]) · Bicycle features (ICC=0.65 [0.55, 0.72]) · Overpass (ICC=0.02 [-0.12, 0.17]) Negative crossing subscales:

					· Road width (ICC=0.40 [0.26, 0.51]) · Positive crossings (ICC=0.82 [0.77, 0.87]) · Negative crossings (ICC=0.40 [0.26, 0.51]) Positive segment subscales: · Building height-setbacks (ICC=0.84 [0.80, 0.88]) · Building height-road width ratio (ICC=0.56 [0.45, 0.65]) · Buffer (ICC=0.40 [0.27, 0.51]) · Bike infrastructures (ICC=0.57 [0.47, 0.66]) · Shade (ICC=0.76 [0.69, 0.81]) · Sidewalks (ICC=0.76 [0.69, 0.81]) · Pedestrian infrastructures (ICC=0.39 [0.26, 0.51]) · Building aesthetics and design (ICC=0.53 [0.42, 0.63]) · Informal paths or shortcuts (ICC=0.07 [-0.07, 0.21]) · Hawkers/Shops (ICC=-0.03 [-0.17, 0.11]) Negative segment subscales: · Sidewalks (ICC=0.28 [0.15, 0.41]) · Positive segments (ICC=0.76 [0.69, 0.81]) · Negative segments (ICC=0.52 [0.41, 0.62]) Overall valence and grand scores: · Overall positive scores (ICC=0.60 [0.52, 0.68]) · Overall negative scores (ICC=0.29 [0.15, 0.41]) Cross-domain subscales: · Pedestrian infrastructures (ICC=0.69 [0.60, 0.76]) · Pedestrian design (ICC=0.82 [0.76, 0.86]) · Bicycles facilities (ICC=0.73 [0.65, 0.79])

Goel et al. (2018)	34 Cities, UK [C34]	· GSV images (n=2, 000) · Locations (n=1, 000)	Unvalidated tool [VL]	GSV	· Pedestrians (%A=73.2%, ICC=0.75, Finn's C=0.72) · Cyclists (%A=99.0%, ICC=0.66, Finn's C=0.99) · Parked cycles (%A=99.0%, ICC=0.61, Finn's C=0.99) · Cars (%A=60.6%, ICC=0.76, Finn's C=0.60) · Buses (%A=98.2%, ICC=0.64, Finn's C=0.98) · Motorcycles/scooters (%A=97.2%, ICC=0.74, Finn's C=0.97) · Vans/trucks (%A=69.2%, ICC=0.74, Finn's C=0.68)
Gullón et al. (2015)	Madrid, Spain [C]	· Areas (n=3) · Street segments (n=500)	Madrid SPACES [VL]	GSV	Walking function: ·Walking surface (ICC=0.96) · Neighborhood permeability (ICC=0.69) ·Walking infrastructures (ICC=0.86) Walking Safety: · Streets (lanes) (ICC=0.41) · Fixed traffic controls (ICC=0.58) · Path safety (ICC=0.48) · Traffic safety (ICC=0.89) Walking Aesthetics: · Streetscape aesthetics (ICC=0.80) · View aesthetics (ICC=0.75) · Subjective walking assessment (ICC=0.55) Walking Destinations: · Land use mix (ICC=0.85) Cycling function: ·Cycling surface (ICC=0.51) · Neighborhood permeability (ICC=0.69)

					·Cycling infrastructure (ICC=0.39) Cycling Safety: · Streets (lanes) (ICC=0.40) · Fixed traffic controls (ICC=0.58) · Traffic safety (ICC=0.89) Cycling Aesthetics: · Streetscape aesthetics (ICC=0.80) · View aesthetics (ICC=0.75) · Subjective cycling assessment (ICC=0.53) Cycling Destinations: · Land use mix (ICC=0.85)
Gustat et al. (2020)	Washington, US [C]	· Participants (n=1, 245) · Street segments (n=1,340)	The Rural Active Living Assessment street segment audit tool [VL]	GSV	· Paths (%A=79.87%, C*k*=0.63, W*k*=0.93) · Pedestrian safety (%A=84.63%, C*k*=0.75, W*k*=0.89) · Aesthetics (%A=57.78%, C*k*=0.25, W*k*=0.32) · Physical security (%A=84.44%, C*k*=0.77, W*k*=0.74) · Destinations (%A=98.47%, C*k*=0.34, W*k*=0.37) · Land use types (%A=85.63%, C*k*=0.74, W*k*=0.65)
Hanibuchi et al. (2019)	Nagoya, Japan [C]	· Neighborhoods (n=20) · Street segments (n=415)	Validated tool based on WASABE, PEDS, MAPS, CUBEST, and EAST-HK [VL]	· GSV · IFS	Physical condition: · Sidewalks (ICC=0.99) · Wide sidewalks (ICC=0.76) · Obstructions (ICC=0.59) · Steep slopes (ICC=0.92) Safety: · Street parking (ICC=0.30) · Heavy traffic (ICC=0.49)

					· Heavy foot traffic (ICC=0.40) · Crosswalks (ICC=0.96) · Traffic mirrors (ICC=0.76) · Street lights (ICC=0.85) Aesthetic: · Street trees (ICC=0.98) · Attractive streetscapes (ICC=0.58) · Graffiti and litter (ICC=0.44) · Abandoned buildings (ICC=0.68)
Harding et al. (2020)	Allegheny, US [CT]	Locations (n=50)	ANC [VL]	GSV	· Residential characteristics (PABAK=[0.81, 1.00]) · Land use types (PABAK=[0.40, 0.96]) · Residential use types (PABAK=[0.24, 0.96]) · Public recreational facilities (PABAK=[0.76, 0.96]) · Nonresidential use (PABAK=[0.20, 1.00]) · Street characteristics (PABAK=[0.20, 0.80]) · Environmental quality (PABAK=[0.56, 0.88]) · Sidewalk characteristics (PABAK=[0.40, 1.00])
He et al. (2017)	Columbus, US [C]	· Crime locations (n=4,791) · Blocks (n=331) · Individual-level properties (n=459)	Validated tool based on RBEI [VL]	GSV	Physical incivility: · Graffiti · Damage on street property · Potholes in street · Unsecured abandoned buildings · Secured abandoned buildings · Abandoned cars · Litter

					· Dilapidated exterior · Roof condition · Cracked brick or concrete · Broken windows or fixtures Territorial functioning: · Block or crime watch signs · Trees or shrubs · Personalization on the poverty · House or yard decorations · Gardens · Lawn in poor condition · Place to sit outside · Signs of dog Defensible space: · Barriers · Security bars on windows and doors
Ilic et al. (2019)	Ottawa, Canada [C]	Unique locations (n=86, 110)	Unvalidated tool [CA]	GSV	Improvements in the frontage quality, building structure plus the front of the property, of each unique location (%A=95.6%, AUC=0.84, F1 score=0.72)
Isola et al. (2019)	New York, US [C]	Patients (n=631)	Unvalidated tool [VL]	GSV	· High visibility cross walks · Traffic signals · Refuge island · Less than six lanes · Pedestrian countdown timer · Sidewalks

Javanmardi et al. (2020)	497 cities, US [C497]	Neighborhoods (n=19, 562)	Unvalidated tool [CA]	GSV	· Presence of green space (R^2=0.704) · Housing Types: single family or multi-families (R^2=0.704) · Presence of crosswalks (R^2=0.704)
Kelly et al. (2013)	Indianapolis and St. Louis, US [C2]	Street segments (n=288)	ANC [VL]	GSV	Land use: · Land use types (C*k*=0.67, PABAK=0.76) · Predominant uses (C*k*=0.40, PABAK=0.85) · Residential uses (C*k*=0.41, PABAK=0.89) · Parking (C*k*=0.32, PABAK=0.60) · Recreational (C*k*=0.40, PABAK=0.97) · Non-residential (C*k*=0.51, PABAK=0.93) Public transit (C*k*=0.52, PABAK=0.90) Street characteristic (C*k*=0.62, PABAK=0.91) Quality of environment (C*k*=0.35, PABAK=0.73) Sidewalk characteristics: · Presence of sidewalks (C*k*=0.89, PABAK=0.90) · Sidewalk continuity (C*k*=0.82, PABAK=0.83) · Sidewalk width (C*k*=0.47, PABAK=0.70) · Curb ramps (C*k*=0.38, PABAK=0.63) · Buffers (C*k*=0.80, PABAK=0.82) · Alignments/obstructs (C*k*=0.19, PABAK=0.73) Shoulder characteristics: · Bike routes or signs (C*k*=0.44, PABAK=0.97) · Presence of shoulders (C*k*=0.55, PABAK=0.85) · Shoulder width (C*k*=0.43, PABAK=0.93) · Shoulder continuity (C*k*=1.00, PABAK=1.00)

					· Shoulder obstructs (C*k*=1.00, PABAK=1.00)
Kelly et al. (2014)	Indianapolis and St. Louis, US [C2]	Street segments (n=291)	ANC [VL]	GSV	· Land use · Presence of predominant land use · Presence of residential land uses · Presence of parking facilities · Presence of public recreational facilities · Presence of non-residential land uses · Public transportation availability · Street characteristics visibility · Quality of the environment · Place to walk or bicycle
Kepper et al. (2017)	South Louisiana, US [S]	Neighborhoods (n=42)	Validated tool based on PHDCN and SSO [VL]	GSV	· Physical disorder (%A=100%) · Physical decay (%A=83%) · Street safety (%A=100%) · Safety (%A=100%) · Land use types (%A=100%)
Keralis et al. (2020)	416 cities in all 50 states and the District of Columbia, US [C416]	Census tracts (n=20, 121)	Unvalidated tool [CA]	GSV	· Street greenness scores (%A=[85%, 93%]) · Crosswalk scores (%A=[85%, 93%]) · Building type scores (%A=[85%, 93%]) · Single-lane road scores (%A=[85%, 93%]) · Visible wire scores (%A=[85%, 93%])
Kim and Clarke (2015)	Michigan, US [C]	Participants (n=965)	SSO [VL]	GSV	· Graffiti painted over (mean Cα=0.935) · Garbage, litter, or broken glass (mean Cα=0.935) · Cigarette or cigar butts (mean Cα=0.935) · Empty beer or liquor bottles in streets (mean Cα=0.935)

					· Gang graffiti (mean Cα=0.935) · Other graffiti on buildings (mean Cα=0.935) · Abandoned cars (mean Cα=0.935)
Kim and Lee (2022)	Yeonse-ro street, Korea [ST]	Street segments (n=3)	Unvalidated tool [VL]	• DRV • 360 VR	Urban design qualities: • Imageability (ICC: DRV=0.938, 360 VR=0.861) • Enclosures (ICC: DRV=0.820, 360 VR=0.852) • Human scales (ICC: DRV=0.563, 360 VR=0.663) • Transparency (ICC: DRV=0.777, 360 VR=0.256) • Complexity (ICC: DRV=0.381, 360 VR=0.759) Levels of opportunities to walk: • Sufficiency (ICC: DRV=0.331, 360 VR=0.797) • Availability (ICC: DRV<0.001, 360 VR=0.745) • Safety (ICC: DRV=0.347, 360 VR=0.261) Level of convenience: • Connectivity (ICC: DRV<0.001, 360 VR=0.792) • Continuity (ICC: DRV<0.001, 360 VR=0.547) • Legibility (ICC: DRV=0.838, 360 VR=0.860) Sense of comfort and interest: • Comfort (ICC: DRV=0.143, 360 VR=0.726) • Aesthetic impression (ICC: DRV=0.912, 360 VR=0.722) • Diversity and interest (ICC: DRV=0.793, 360 VR =0.893) Behavior-related qualities and perceptions: • Vitality (ICC: DRV=0.870, 360 VR=0.721) • Crowdedness (ICC: DRV=0.753, 360 VR=0.810)

					• Festiveness (ICC: DRV=0.629, 360 VR=0.167) • Diversity in activities (ICC: DRV=0.693, 360 VR=0.441) Overall condition: • Overall walkability (ICC: DRV<0.001, 360 VR=0.949) • Need for improvement (ICC: DRV=0.905, 360 VR=0.813) • Potential for improvement (ICC: DRV=0.591, 360 VR=0.954)
Koo et al. (2022a)	Atlanta, US [C]	Street segments (n=100)	MAPS [CA]	GSV	Segment: · Sidewalk buffers (C*k*=0.658, [0.509, 0.807]) · No graffiti (C*k*=0.423, [0.071, 0.775]) · Seats (C*k*=0.314, [-0.178, 0.806]) · Sidewalks (C*k*=0.717, [0.556, 0.878]) · No trip hazard (C*k*=0.379, [0.141, 0.617]) · No ill-maintained buildings (C*k*=0.108, [0.141, 0.617]) · Shade from overhead tree (C*k*=0.357, [0.196, 0.518]) · Street lights (C*k*=[0.438, 0.669]) · Bike paths (C*k*=0.852, [0.566, 1.000]) · Public parks (C*k*=0.764, [0.574, 0.953]) · Contains (C*k*=0.728, [0.586, 0.870]) · Commercial uses · Transit stops (C*k*=0.620, [0.489, 0.752]) Crossing1: · Walk signals (C*k*=0.897, [0.758, 1.000]) · Crosswalks (C*k*=0.481, [0.300, 0.662]) · Curb ramps (C*k*=0.484, [0.312, 0.655])

					Crossing2: · Walk signals (C*k*=0.777, [0.567, 0.987]) · Crosswalks (C*k*=0.435, [0.255, 0.615]) · Curb ramps (C*k*=0.401, [0.220, 0.582])
Koo et al. (2022b)	Atlanta, US [C]	Locations (n=70,105)	Unvalidated tool [CA]	GSV	· Building-to-street ratio · Greenness · Sidewalk-to-street proportion
Kurka et al. (2016)	Phoenix and San Diego, US [C2]	Residential routes and commercial clusters (n=120)	MAPS [VL]	· GE · GSV	Land use types (ICC=[0.61, 1.00]): · Food-related · Retail and service oriented · Government or community designated · Recreational · Other categories
Lafontaine et al. (2017)	Ottawa, Canada [C]	· Neighborhoods (n=15) · Blocks (n=167)	SSO [VL]	GSV	· Cleanliness of streets and properties (*r*: 2011=0.66***, 2012=0.30**, 2013=0.81) · Presence of trees (*r*: 2011=0.89, 2012=0.48**, 2013=0.75) · Quality of trees (*r*: 2011=0.77, 2012=0.09**, 2013=0.40***) · Landscaping (*r*: 2011=0.79, 2012=0.69, 2013=0.79) · Flowers and shrubs (*r*: 2011=0.78, 2012=0.66, 2013=0.80) · Houses well-spaced (*r*: 2011=0.89, 2012=0.77*, 2013=0.73) · Upkeep of homes (*r*: 2011=0.88, 2012=0.77, 2013=0.78) · Presence of outdoor furniture (*r*: 2011=0.97, 2012=0.67, 2013=0.62) · Quality of outdoor furniture (*r*: 2011=0.96, 2012=0.67, 2013=0.62) · Pedestrian infrastructure (*r*: 2011=0.87, 2012=0.80, 2013=0.34**)

Less et al. (2015)	Oakland, California, US [C]	Stores (n=20)	Unvalidated tools [VL]	GSV	• Neighborhood types (%A=100%) • Primary land use types (%A=95%) • Store types (%A=100%) • Loitering opportunity (%A=87%) • Street % sidewalk condition (%A=51%) • Building condition (%A=76%) • Social disorder indicators, store block (%A=74%) • Social disorder indicators, adjacent block (%A=76%) • Physical disorder indicators, store block (%A=29%) • Physical disorder indicators, adjacent block (%A=8%)
Li et al. (2021)	Los Angeles, Brentwood, Hollywood Hills West, Sun Valley, Wilmington, US [C5]	· Communities (n=4) · Neighborhoods (n=8) · Street segments (n=200)	ANC [VL]	GSV	· Land use types (mean C*k*=0.625) · Public transit (mean C*k*=0.625) · Quality of the environment (mean C*k*=0.625)
Li et al. (2022)	Qingdao, China [C]	Streets (n=12,972)	Unvalidated tool [VL]	TSV	Presence of enclosure (IoU=85.61%): • Extent to line of sight around is blocked • % of street buildings • % of open sky Presence of human scale (IoU=85.61%): • Extent to line of sight around is blocked at horizontal and vertical directions • % of opening window

					• Building height • Number of flower beds planted Presence of transparency (IoU=85.61%): • Number of French windows • % of street of activities (shops, restaurants) Presence of complexity (IoU=85.61%): • Number and kinds of buildings • Shape, size, materials and colors of street • Number and kinds of landscape elements • Number and kinds of street furniture and signage Presence of imageability (IoU=85.61%): • Presence of park, yard, square • Presence of landmark structure • Presence of historical architecture • Presence of irregular or strongly characteristic of buildings
Mackenbach et al. (2018)	Ghent and suburbs, Paris and inner suburbs, Budapest and suburbs, the Randstad, Greater London, Europe [C5]	· Participants (n=5, 199) · Neighborhoods (n=59) · Street segments (n=4, 486)	S-VAT [VL]	GSV	Availability of outdoor recreational facilities: · Play sports · Recreate in any other way: parks, soccer courts, outdoor fitness areas or skate parks

Marco et al. (2017)	Valencia, Spain [C]	Census block groups (n=92)	Neighborhood Disorder Observational Scale [VL]	GSV	Physical disorder (*r*=0.95***): · Cigarette butts · Trash · Empty bottles · Graffiti · Political graffiti Physical decay (*r*=0.97***): · Vacant houses · Deteriorated commercial buildings, · Vandalized buildings · Residential deterioration · Deteriorated facilities
Mayne et al. (2019)	Chicago, US [C]	Blocks (n=809)	Validated tool based on Google Street View Physical Disorder Measure [VL]	GSV	· Trash/garbage (%A=85.2%, C*k*=0.53) · Abandoned vehicle (%A=98.8%) · Graffiti (%A=91.4%, C*k*=0.56) · Graffiti scrubbed/painted over (%A=86.4%, C*k*=0.50) · Other defaced property (%A=76.4%, C*k*=0.44) · Bars on windows/doors (%A=86.4%, C*k*=0.67) · Abandoned/boarded up buildings (%A=92.6%) · Building condition (%A=97.3%) · Vacant lots (%A=93.4%, C*k*=0.57)
Ma et al. (2021)	Shenzhen, Guangdong, China [C]	Locations (n=320,632)	Unvalidated tool [CA]	TSV	· Greenness · Openness · Enclosure · Walkability

					· Imageability
McKee et al. (2017)	Minnesota, Minneapolis, and Washington, D.C., US [C2]	Stores (n=12)	Unvalidated tool [VL]	GSV	• Land use types • Opportunity to loiter • Building conditions • Street and sidewalk conditions • Physical disorder • Social disorder
Mertens et al. (2017)	Ghent and suburbs, Paris and inner suburbs, Budapest and suburbs, the Randstad, Greater London, Europe [C5]	· Participants (n=6, 037) · Neighborhoods (n=59) · Street segments (n=4, 486)	S-VAT [VL]	GSV	· Traffic calming features: speed humps, traffic island, roundabouts or traffic lights · Speed limit ≤ 30 km/h · Bicycle lanes · Cars: obstacle · Green and water areas · Trees · Litter
Mooney et al. (2014)	Detroit, New York, Philadelphia, San Joes, US [C4]	Blocks (n=1, 826)	CANVAS [VL]	GSV	· Presence of garbage, litter, or broken glass (C*k*=0.35) · Presence of empty beer or liquor bottles (C*k*=0.34) · Presence of graffiti (C*k*=0.55) · Presence of abandoned cars (C*k*=0.63) · Condition of buildings (C*k*=0.48) · Presence of burned-outed buildings (C*k*=0.69) · Presence of boarded-out buildings or abandoned buildings (C*k*=0.80) · Vacant or undeveloped land (C*k*=0.55)

					· Presence of bars on windows (C*k*=0.53)
Mooney et al. (2016)	New York, US [C]	Intersections (n=532)	CANVAS [VL]	GSV	· Crosswalks (C*k*=0.83) · Curb ramps (C*k*=0.48) · Visible billboards (C*k*=0.75) · Sidewalk condition (C*k*=0.40) · Road condition (C*k*=0.51) · Pedestrian signals (C*k*=1.00) · Traffic islands (C*k*=0.52) · Traffic-calming devices (C*k*=0.37) · Bus stops (C*k*=0.70)
Mooney et al. (2017)	Detroit, US [C]	· Blocks (n=135) · Street segments (n=4, 138)	CANVAS [VL]	GSV	· Litter · Empty alcohol bottles · Graffiti · Burned-out buildings (C*k*=0.43) · Abandoned buildings (C*k*=0.43) · Abandoned cars (C*k*=-0.06) · Poor building maintenance · Vacant lots (C*k*=0.31) · Bars on windows
Mooney et al. (2020)	New York, US [C]	Intersections (n=188)	CANVAS [VL]	GSV	· Restaurants, delis/convenience stores, bars, or other alcohol retailers (F*k*=0.78, C*k*=0.80) · Street lights (F*k*=0.03, C*k*=-0.01) · Types of intersection (F*k*=0.76, C*k*=0.87) · Subjective ranking of crossing danger level (F*k*=0.24, C*k*=0.56) · Overhead physical structure (F*k*=0.81, C*k*=0.85) · Significant image change (F*k*=0.16, C*k*=0.26)

					· Bicycle lanes (F*k*=0.84, C*k*=0.83) · On-road, paint-only bicycle lanes (F*k*=0.82, C*k*=0.80) · On-road, physically separated bicycle lanes (F*k*=0.82, C*k*=0.81) · Off-road bicycle lanes (F*k*=0.83, C*k*=0.83) · Outdoor dinning areas (F*k*=0.05, C*k*=0.43) · Types of on-street parking (F*k*=0.49, C*k*=0.75) · Any on street parking (F*k*=0.00, C*k*=0.50) · Visible billboards (F*k*=0.40, C*k*=0.68) · Pedestrian crossing marked or unmarked (F*k*=0.73, C*k*=0.75) · Significant open view of landmark or scenery (F*k*=0.11, C*k*=0.67) · Parks, playgrounds or fields (F*k*=0.57, C*k*=0.82) · Other public space (F*k*=0.37, C*k*=0.65) · Types of crosswalk (F*k*=0.78, C*k*=0.82) · Types of traffic signal (F*k*=0.81, C*k*=0.86) · Abandoned lots (F*k*=0.26, C*k*=0.57) · Sidewalk continuity (F*k*=0.14, C*k*=0.24) · Road condition (F*k*=0.16, C*k*=0.34) · Road condition: poor (F*k*=0.29, C*k*=0.37) · Parking lot spanning building frontage (F*k*=0.07, C*k*=0.45) · Pedestrian signals (F*k*=0.92, C*k*=0.88) · Medians or islands for pedestrian refuge (F*k*=0.74, C*k*=0.90) · Curb extension (F*k*=0.35, C*k*=0.84) · Chicane · Chokers (F*k*=0.00, C*k*=0.00) · Speed bump (F*k*=0.57, C*k*=0.00)

					· Rumble strip · Other traffic calming device or design (F*k*=-0.01, C*k*=-0.01) · Bike route signs, bike crossing warnings or sharrows (F*k*=0.42, C*k*=0.64) · Commercial garbage bin or dumpster (F*k*=0.14, C*k*=0.36) · Tree shade level (F*k*=0.27, C*k*=0.51) · Bus stops (F*k*=0.57, C*k*=0.72) · Types of sidewalk or path (F*k*=0.00, C*k*=0.00)
Mygind et al. (2016)	Victoria, Australia [C]	Parks (n=171)	POSDAT [VL]	GSV	· Activity space (%A=[80%, 100%]) · Quality of the environment (%A=100%) · Water features (%A=100%) · Other natural features (%A=[75%, 100%]) · Amenities (%A=[60%, 100%]) · Lights (%A=[80, 100%])
Nagata et al. (2020)	Tokyo, Japan [C]	Intersections (n=5, 317)	Validated tool based on WASABE, PEDS, MAPS, CUBEST, and EAST-HK [CA]	GSV	· Sidewalks (%A=82%, C*k*=0.76, IoU=70%) · Wide sidewalks (%A=82%, C*k*=0.76, IoU=70%) · Obstructions (%A=82%, C*k*=0.76, IoU=70%) · Steep slopes (%A=82%, C*k*=0.76, IoU=70%) · Street parking (%A=82%, C*k*=0.76, IoU=70%) · Heavy traffic (%A=82%, C*k*=0.76, IoU=70%) · Crosswalks (%A=82%, C*k*=0.76, IoU=70%) · Traffic mirrors (%A=82%, C*k*=0.76, IoU=70%) · Street lights (%A=82%, C*k*=0.76, IoU=70%) · Street trees (%A=82%, C*k*=0.76, IoU=70%) · Attractive streetscapes (%A=82%, C*k*=0.76, IoU=70%) · Graffiti and litter (%A=82%, C*k*=0.76, IoU=70%)

					· Abandoned buildings (%A=82%, C*k*=0.76, IoU=70%)
Nelson et al. (2019)	Pittsburgh, US [C]	· Parks (n=16) · Locations (n=65)	Unvalidated tool [VL]	· GSV · IFS	Facilities: · Court or field · Playground: presence, condition, and presence of lights · Open green space: presence and condition Amenities: · Shelters: presence and condition · Benches · Trash cans: presence and condition Incivilities: · Litter · Graffiti · Overgrown
Nesoff et al. (2018)	Baltimore, US [C]	Liquor stores (n=172)	IPSI [VL]	GSV	Roadway features: · One-way or two-way street · Number of street lanes · Posted speed limit · Speed limit · Street lights of lampposts · On-street parking · Presence of alley streets · Presence of driveways · Sidewalks · Sidewalk maintenance and walkability · Traffic islands or medians

					· Speed bumps or humps · Pedestrian overpass · Underpass, or bridges · Fences or other barriers · Bus stops · Highway on-ramps or exit-ramps Midblock features: · Number of marked mid-block crosswalks · Number of crosswalk with reflectors or flashing lights · Number of pedestrian crossing signs · Number of pedestrian crossing signals Intersection features: · Traffic circle or roundabout · Number of intersecting streets · Number of marked crosswalks with pedestrian safety-related facilities · Intersection features · Number of marked cross without with pedestrian safety-related facilities · Number of crosswalk with reflectors of flashing lights; number of streets with traffic lights · Number of stop signs · Number of yield signs · Number of pedestrian crossing signals · Number of pedestrian crossing signs · Number of streets with stop line set back from crosswalk
Nguyen et al. (2018)	Salt Lake City, Chicago,	Cities (n=3)	Unvalidated tool [CA]	GSV	· Presence of crosswalks (%A=[86%, 96%]) · Building types: single-family homes or others (%A=[85%, 90%])

	Charleston, US [C3]				· Street greenness/landscaping: street trees and street landscaping comprised at least 30% of the image (%A=[85%, 95%])
Nguyen et al. (2019)	2, 143 counties, US [CT2143]	Counties (n=2, 143)	Unvalidated tool [CA]	GSV	· Highways: main road (%A=92.00%) · Rural area: sparsely spaced houses or buildings, limited surrounding infrastructure, unpaved roads (%A=87.13%) · Grassland (%A=94.06%)
Nguyen et al. (2020)	20 states, US [S20]	Zip codes (n=8, 171)	Unvalidated tool [CA]	GSV	· Street greenness (%A=88.70%) · Presence of crosswalks (%A=97.20%) · Single lane roads (%A=88.41%) · Building types: single-family detached house or others (%A=82.35%) · Visible utility wires (%A=83.00%)
Nguyen et al. (2021)	2, 916 counties, US [CT2916]	Counties (n=2, 916)	Unvalidated tool [CA]	GSV	· Presence of crosswalks (%A=[85%, 93%]) · Building types: single-family homes or others (%A=[85%, 93%]) · Single-lane roads (%A=[85%, 93%]) · Visible utility wires overhead (%A=[85%, 93%])
Okaidjah et al. (2023)	Des Moines, Iowa, US [C]	Neighborhood (n=21)	Unvalidated tool [VL]	GSV	• Presence of commercial land uses • Presence of institutional land uses • Presence of single family residential • Presence of signalized intersections • Presence of sidewalks • Presence of crosswalks • Presence of two-way stop control intersections • Presence of schools • Presence of parks • Presence of on-street parking

					• Presence of bus stops • Presence of trees
Paydar and Fard (2022)	Temuco, Chile [C]	Participants (n=463)	PEDS [VL]	GSV	Walkway's structural features: • Presence of pathway for pedestrian • Sidewalk width • Quality of pavement • Track length • Physical barriers/path obstructions • The buffer between road and path • Slope • Amenities Street's structural features: • On-street parking • Off-street parking lot spaces Permeability (street connectivity): • Sidewalk connectivity Traffic safety: • Crossing aids • Posted speed limit • Traffic control devices Personal security: • Surveillance (visibility) Streetscapes:

					• Number of trees • Overall cleanliness and building maintenance • Building height • Articulations in building design Views: • Nature
Phan et al. (2020)	US [S51]	States (n=51)	Unvalidated tool [CA]	GSV	· Presence of crosswalks (%A=[85%, 93%]) · Building types: non-single-family home or others (%A=[85%, 93%]) · Single-lane roads (%A=[85%, 93%]) · Visible utility wires overhead (%A=[85%, 93%])
Phillips et al. (2017)	Phoenix and San Diego, US [C2]	· Routes (n=120) · Street segments (n=298) · Crossings (n=214) · Cul-de-sacs (n=18)	MAPS [FL]	· GM · GSV	Route-level items: · Destinations and land use (ICC=[0.53, 0.92]) · Streetscape characteristics (ICC=[0.57, 0.95]) · Aesthetics and social characteristics (ICC=[0.07, 0.15]) Street segment-level items: · Building height-setbacks (ICC=0.56) · Building height/Road widths plus setback ratio (ICC=0.05) · Street buffers (ICC=0.89) · Bicycle facilities (ICC=0.85) · Trees (ICC=0.66) · Sidewalks (ICC=0.85) · Shortcuts (ICC=0.65) Crossing-level items: · Crosswalk amenities (ICC=0.81)

					· Curb quality (ICC=0.87) · Intersection control (ICC=0.92) Cul-de-sac items (ICC=0.43)
Plascak et al. (2020a)	New Jersey, US [C]	Locations (n=8, 262)	CANVAS, Irvine, PEDS, and PHDCN [FL]	GSV	Intersection-related walkability/pedestrian safety: · Clear intersections (F*k*=0.645) · Pedestrian crossing signs (F*k*=0.686) · Pedestrian signals (F*k*=0.789) · Pedestrian crossing marks (F*k*=0.577) · Type of pedestrian crosswalk marks (F*k*=0.881) · Traffic signal types (F*k*=0.788) · One-way streets (F*k*=0.741) · Number of lanes (F*k*=0.856) · Presence of highways (F*k*=0.346) · Highway barriers Sidewalk-related walkability/pedestrian safety: · Sidewalk presence (F*k*=0.949) · Complete sidewalks (F*k*=0.594) · Sidewalk condition (F*k*=0.523) · Sidewalk width (F*k*=0.632) · Sidewalk from curb distance (F*k*=0.094) · Car obstruction (F*k*=0.407) · Garbage can obstruction (F*k*=0.423) · Other obstruction ((F*k*=0.544) · Pole or sign obstruction (F*k*=0.188) · Curb ramps (F*k*=0.503)

					Physical disorder/aesthetics: · Presence of garbage/litter/glass (F*k*=0.472) · Abandoned cars · Building condition (F*k*=0.401) · Yard condition (F*k*=0.434) · Dumpsters (F*k*=0.593) · Presences of graffiti (F*k*=0.637) · Burned buildings · Abandoned buildings/boarded up (F*k*=0.722) · Outdoor seats(F*k*=0.574)
Plascak et al. (2020b)	New Jersey, US [C]	Locations (n=8, 262)	CANVAS, Irvine, PEDS, and PHDCN [FL]	GSV	Neighborhood physical disorder-related items: · Garbage · Abandoned cars · Building conditions ≥ moderate · Yard conditions ≥ moderate · Dumpster · Graffiti · Boarded/burned building · Outdoor seating · Team sports · Yard decorations · Fences Sidewalk-related items: · Presence of sidewalks · Complete sidewalks

					· Sidewalk condition · Sidewalk width · Sidewalk from curb distance · Car obstructions · Garbage can obstructions · Pole or sign obstructions · Other obstructions · Curb ramps Intersection-related items: · Clear intersections · Pedestrian crossing signs · Pedestrian signals · Pedestrian crossing marks · Type of pedestrian crosswalk marks · Traffic signal types · One-way streets · Number of lanes · Highway presence · Highway barriers
Plascak et al. (2022)	Essex county, New Jersey, US [CT]	Locations (n=768)	CANVAS [VL]	GSV	• Presence of garbage • Presence of graffiti • Presence of abandoned buildings • Presence of dumpsters • Building conditions

					• Yard conditions
Queralt et al. (2021)	Melbourne (Australia), Ghent (Belgium), Curitiba (Brazil), Hong Kong (China), and Valencia (Spain) [C5]	· Routes (n=349) · Street segments (n=1, 228) · Crossings (n=799) · Cul-de-sacs (n=16)	MAPS [VL]	· GE · GSV	Routes: · Destinations and land uses (ICC=[0.680, 0.902]) · Streetscape (ICC=[0.597, 0.891]) · Aesthetics and social environment (ICC=[0.612, 0.738]) Street segments (ICC=[0.194, 0.929]): · Aspects of sidewalks · Bicycle facilities · Pedestrian shortcuts Crossings (ICC=[0.751, 0.921]): · Pedestrian protection features · Crossing width Cul-de-sac: · Sizes · Presence of amenities
Quinn et al. (2016)	New York, US [C]	Blocks (n=532)	CANVAS [VL]	GSV	· Presence of garbage, litter, or broken glass · Presence of empty beer or liquor bottles · Presence of graffiti · Presence of abandoned cars · Condition of buildings · Presence of burned-outed buildings · Presence of boarded-out buildings or abandoned buildings · Vacant or undeveloped land · Presence of bars on windows

Rigolon et al. (2018)	Los Angeles, US [C]	Census block groups (n=51)	PEDS [VL]	· GE · GSV	Pedestrian facilities: · Type of pedestrian facility (C*k*=0.749) · Path material (C*k*=0.749) · Path condition (Cα=0.436) · Path obstructions (Cα=0.841) · Path-road buffers (C*k*=0.751) · Path-road distance (Cα=0.867) · Path width (Cα=0.869) · Curb ramps (Cα=0.835) · Path completeness (C*k*=0.749) · Path connectivity (Cα=0.858) Road attributes: · Street segment types (C*k*=0.987) · Lanes to cross (Cα=0.964) · Speed limit (Cα=0.991) · Parking as a buffers (C*k*=0.780) · Traffic controls (Cα=0.906) · Crosswalks (Cα=0.963) · Crossing aids (Cα=0.853) Walking environment: · Street lights (C*k*=0.987) · Amenities (Cα=0.942) · Shade trees (Cα=0.937) · Cleanliness and maintenance (Cα=0.945) · Building articulation (C*k*=0.434)

					· Building setback (Cα=0.912) · Building height (Cα=0.991) · Slope (Cα=0.909)
Roberge et al. (2022)	Quebec, Canada [C]	· Neighborhoods (n=30) · Street segments (n=295)	QUALITY-HOOD [VL]	GSV	· Street segment land use and design items (%A≥90%) · Street segment installations or signs(%A≥90%) · Street segment modifications and markings (%A≥90%) · Road types (70%≤%A<90%) · Ads/commercial billboards (70%≤%A<90%) · Road-sidewalk buffer zones (70%≤%A<90%) · Road bicycle path buffer zones (%A<70%) • Perceived quality, safety and aesthetics, extent of tree canopy, proportion of well-maintained residences/buildings (%A=[59.9%, 87.6%]) • Effort required to get round on foot (%A=40.0%) • Overall neighborhood safety (%A=86.7%)
Roda et al. (2016)	Ghent and suburbs, Paris and inner suburbs, Budapest and suburbs, the Randstad, Greater London, Europe [C5]	· Participants (n=6, 037) . Neighborhoods (n=60)	S-VAT [VL]	GSV	Food outlets: · Super markets (%A=81.0%) · Local shops (%A=67.4%) · Restaurants (%A=78.2%) · Cafe/bars (%A=78.2%) · Fast-food restaurants or take away (%A=61.6%) Walking, cycling infrastructures: · Sidewalks (%A=51.2%) · Bicycle lanes (%A=40.3%) Physical activity facilities: · Indoor recreational facilities (%A=56.8%)

					· Outdoor recreational facilities (%A=80.9%) · Public parks Aesthetics: · Graffiti and litter (%A=41.5%) Housing diversity: · Detached/semidetached homes (%A=58.2%)
Ruggeri et al. (2018)	San Francisco, US, and Oslo, Norway [C2]	Neighborhood (n=2)	Unvalidated tool [VL]	GSV	• Plazas, courtyards, and parks • Landscape features • Wayfinding elements • High-intensity uses • Commonly styled buildings • Unique buildings • Freestanding buildings • Complexly shaped buildings • Distinct facades • Artistic elements • Undesirable land uses • Transparent facades • Cleanliness • Sight lines • Visible sky • Cross-section • Setbacks

					• Noise • Street amenities • Trees • Overhangs • People • Ground-level vacancies • Construction • Visible land uses • Transportation infrastructure • Heavily trafficked streets • Crosswalks
Rundle et al. (2011)	New York, US [C]	Blocks (n=38)	An audit tool based on an inventory of key constructs in research on urban design and neighborhood physical and social conditions [VL]	GSV	· Aesthetics · Physical disorder · Pedestrian safety · Motorized traffic and parking · Infrastructure for active travel · Sidewalk amenities · Social activity
Saito et al. (2022)	Fujisawa, Japan [C].	• Participants (n=32) • Locations (n=19)	MAPS-Global version [VL]	GSV	Routes: • Residential mix (%A=89.5%) • Shops (ICC=0.96 [0.91,0.98]) • Restaurant-entertainment (ICC=0.99 [0.98, 0.99]) • Institutional-service (ICC=0.97 [0.92,0.98])

					• Institutional-place of worship (%A=89.5%) • Institutional-school (ICC=0.87[0.68,0.95]) • Public recreation facilities (ICC=0.94 [0.85,0.97]) • Private recreation facilities (ICC=1.00) • Pedestrian street (ICC=0.67 [0.17, 0.87]) • Age-restricted bar or nightclub (ICC=1.00) • Liquor or alcohol store (ICC=1.00) • Positive destination & land use (ICC=0.98 [0.96,0.99]) • Negative destination & land use (ICC=1.00) Crossings: • Positive crosswalk amenities (ICC=0.83[0.57,0.93]) • Positive curb quality (ICC=0.99 [0.98,0.99]) • Positive intersection control and signage (ICC=0.90 [0.76,0.96]) • Positive bicycle features (ICC=0.56 [-0.10, 0.83]) • Pedestrian overpass positive (%A=98.7%) • Negative road width(ICC=0.96 [0.91,0.98]) • Positive overall crossings scores (ICC=0.97[0.92,0.98]) • Overall crossings scores (ICC=0.97[0.92,0.98]) Segment and Cul-De-Sac: • Positive building height and setbacks (ICC=0.35[-0.65,0.74]) • Positive building height: road width and setback ratio (ICC=0.89[0.72,0.95]) • Positive buffers (ICC=0.73[0.32,0.89]) • Positive bicycle infrastructures (ICC=0.99[0.99,0.99])

					• Positive shade (ICC=0.70[0.25,0.88]) • Positive sidewalk qualities (ICC=0.84[0.59,0.93]) • Positive pedestrian infrastructures (ICC=0.86[0.65,0.94]) • Positive building aesthetics and design (ICC=0.38[-0.56,0.76]) • Positive informal paths or shortcuts (%A=89.8%) • Positive hawkers/shop positive (ICC=1.00) • Positive overall segments(ICC=0.75[0.38,0.99]) • Negative overall segments (ICC=0.22[-0.97,0.70]) • Overall segments scores (ICC=0.79[0.46,0.91]) • Overall cul-de-sac/dead-end scores (ICC=0.95[0.83,0.98])
(Santos et al. 2019)	Paraná State, Brazil [S]	· Schools (n=30) · Street segments (n=888)	MAPS [VL]	GSV	Routing: · Target destinations · Land use mix · Urban equipment · Transportation options · Street characteristics · Besides social attributes · Street maintenance · Aesthetics Segments: · Number of vehicle lanes · Continuity-, quality-, and width- of sidewalks · Presence of obstacles · Presence and coverage of trees

					· Building height and recessed frontage · Visibility of pedestrians from the window level · Cycling infrastructures · Public lights Crossings: · Intersection controls: signs, stoplights, and turnarounds · Pedestrian signage: pedestrian lanes and elevated crosswalks · Accessibility: recessed guides, tactile paving, and refuge islands · Number of crossing lanes · Waiting areas for bicycles
Schootman et al. (2020)	Washington, US [C]	Patients (n=228)	ANC [VL]	GSV	Land-use characteristics: · Predominant land use, · Land-use mix · Parking and recreational facilities Sidewalks: · Sidewalk presence/absence · Buffers · Continuity · Width · Curb ramps · Misalignments · Obstructions Shoulders and bike lanes: · Shoulder presence/absence · Width

					· Continuity · Designated bike signs · Obstructions Street characteristics: · Transit stops · Number of lanes · Crossing aids · Traffic-calming devices · Speed limit signs Quality of the environment for pedestrians: · Building setbacks · Pedestrian amenities · Litter · Shade trees · Hills
Shatu and Yigitcanlar (2018)	Brisbane, Australia [C]	Street segments (n=47)	SWATCH [VL]	GSV	Sidewalks: · Sidewalk width (ICC=0.44, *F*=2.62***) · Sidewalk continuity (%A=100%) · Sidewalk condition · Number of garbage bins located (ICC=0.58, *F*=3.77***) · Other obstructions · Number of tree shades (ICC=0.65, *F*=4.66***) · Number of benches (ICC=0.63, *F*=4.37***) · Number of fountains (ICC=0.12, *F*=1.27) · Number of vending machines

					· Number of bus stops (ICC=0.62, *F*=4.24***) · Crowd level (ICC=0.61, *F*=4.11***) Land use: · Distance of building from footpath (ICC=0.01, *F*=1.00) · Presence of residential land uses in the ground floor (%A=89.36%) · Presence of commercial land uses in the ground floor (%A=76.60%) · Presence of office/institutional land uses in the ground floor (%A=82.98%) · Presence of industrial land uses in the ground floor (%A=100%) · Presence of recreational land uses in the ground floor (%A=89.36%) · Presence of vacant land uses on the ground floor, presence of stopover activities (%A=100%) · Average building height (ICC=0.58, *F*=3.81***) Traffic environment: · Presence of crossing facilities and number of lanes to cross (%A=100%)
Silva et al. (2015)	São Paulo, Brazil [C]	Street segments (n=29)	Objective Evaluation of Environment [VL]	· GM · GSV	· Flooring (PABAK=1.00[0.83, 1.00], %A=100%[88.3%, 100%]) · Number of cross streets (PABAK=0.66[0.49, 0.84], %A=82.8%[65.5%, 92.4%]) · Existence of sidewalks (PABAK=0.97[0.80, 1.00], %A=96.6%[82.8%, 92.4%]) · Number of irregulariti8es on sidewalks (PABAK=0.78[0.61, 0.96], %A=86.2%[69.4%, 94.5%]) · Number of bus stops (PABAK=0.55[0.38, 0.72], %A=82.8%[65.5%, 92.4%]) · Number of crosswalks (PABAK=0.65[0.49, 0.80], %A=75.9%[57.9%, 87.8%]) · Number of traffic lights (PABAK=0.63[0.47, 0.79], %A=86.2%[69.4%, 94.5%]) · Number of street lights (PABAK=0.27[0.14, 0.39], %A=72.4%[54.3%, 85.3%]) · Slope of the land (PABAK=0.71[0.54, 0.88], %A=82.8%[65.5%, 92.4%]) · Number of green space/squares (PABAK=1.00[0.83, 1.00], %A=100%[88.3%, 100%])
Slater et al. (2021)	Southern state, US [S]	· Jurisdictions (n=19)	ANC [VL]	GSV	· Sidewalks (%A=90.36%) · Marked crosswalks (%A=90.36%)v

		· Street segments (n=4, 363)			· Bike lanes (%A=90.36%) · Bike parking (%A=90.36%)v · Off-road trial (%A=90.36%) · Land use mix (%A=90.36%) · Active recreation (%A=90.36%) · Passive recreation (%A=90.36%)
Steinmetz-Wood et al. (2019)	Montreal, Canada [C]	Participants (n=2, 200)	Virtual-STEPS [VL]	GSV	Pedestrian infrastructures: · Sidewalks (%A=100%, C*k*/ICC=1.00) · Sidewalk continuity (%A=94.9%, C*k*/ICC=0.87) · Sidewalk buffers (%A=100%, C*k*/ICC=1.00) · Sidewalk quality (%A=82.1%, C*k*/ICC=0.63) · Pedestrian signals/timer (%A=100%, C*k*/ICC=1.00) · Pedestrian crossing signs (%A=92.3%, C*k*/ICC=0.63) · Crosswalk markings (%A=92.3%, C*k*/ICC=0.85) · Benches (%A=89.7%, C*k*/ICC=0.73) · Street lights (%A=69.2%, C*k*/ICC=0.51) · Curb ramps (%A=97.4%, C*k*/ICC=0.93) · Curb ramp quality (%A=94.9%, C*k*/ICC=0.64) · Tactile paving (%A=97.4%, C*k*/ICC=0.93) Traffic calming and streets: · Traffic lights (%A=100%, C*k*/ICC=1.00) · Traffic islands (%A=97.4%, C*k*/ICC=0.84) · Stop lines (%A=89.7%, C*k*/ICC=1.00) · Stop signs (%A=97.4%, C*k*/ICC=0.98) · Curb extension (%A=97.4%, C*k*/ICC=0.65)

					· Speed bump (%A=97.4%, C*k*/ICC=0.66) · Bollards (%A=97.4%, C*k*/ICC=0.84) · Number of traffic lanes/parking lanes (%A=87.2%/76.9%, C*k*/ICC=0.84/0.84) · Driveways (%A=87.2%, C*k*/ICC=0.85) Building characteristics: · Building height (%A=89.4%, C*k*/ICC=0.88) · Building setback (%A=87.2%, C*k*/ICC=0.88) · Building design variation (%A=66.7%, C*k*/ICC=0.47) Bicycling infrastructure: · Bike lanes (%A=92.3%, C*k*/ICC=0.75) · Bike buffers (%A=100%, C*k*/ICC=1.00) · Bike facilities (%A=89.7%, C*k*/ICC=0.71) Transit: · Presence of transit (%A=100%, C*k*/ICC=1.00) · Type of transit (%A=97.4%, C*k*/ICC=0.92) · Transit facilities (%A=100%, C*k*/ICC=1.00) Aesthetics/disorder: · Trees (%A=76.9%, C*k*/ICC=0.70) · Shade (%A=79.5%, C*k*/ICC=0.55) · Nature areas (%A=82.1%, C*k*/ICC=0.62) · Landscaping (%A=79.5%, C*k*/ICC=0.56) · Landscape maintenance (%A=94.9%, C*k*/ICC=0.72) · Litter (%A=71.8%, C*k*/ICC=0.47) · Graffiti (%A=84.6%, C*k*/ICC=0.69)

Steinmetz-Wood et al. (2020)	The greater Montreal and the Greater Toronto Area, Canada [C2]	· Participants (n=1, 403) · Street segments (n=3, 450)	Virtual-STEPS [VL]	GSV	· Pedestrian infrastructure: sidewalks · Traffic calming and streets: stop signs · Building characteristics: building height · Aesthetics/disorder: graffiti
Sytsma et al. (2021)	New Jersey, US [C]	Street segments (n=38)	SSO [VL]	· CCTV · GSV	Physical disorder (mean %A=94%): · Garbage/litter · Graffiti//painted over · Abandoned/burned/vandalized car · Abandoned/burned/vandalized building · Vandalized/faded signage · Broken/boarded windows · Broken/ineffective fences · Empty/broken bottles Decay (mean %A=94%): · Sidewalk deterioration · Street deterioration · Garden/lawn deterioration · Vacant space · Building/structure dilapidation Crime generator (mean %A=94%): · Transit location · Parking lots · Retail facility

					· Corner store/small market/food store · Bar/liquor stores · Restaurants · Public parks/public commons
Takagi-Stewart et al. (2022)	Washington, D.C., US [C]	Locations (n=1,006)	CANVAS [VL]	GSV	• Intersections (C*k*=0.79[0.76, 0.81]) · Crosswalks (C*k*=0.77[0.71, 0.82]) · Intersection sizes (C*k*=0.64[0.58, 0.73]) · Traffic control signals (C*k*=0.70[0.63, 0.75]) · Street-width (C*k*=0.68[0.57, 0.75]) · Sidewalks (C*k*=0.86[0.83, 0.88]) · Bus stops (C*k*=0.52 [0.42, 0.63]) · Street lights (C*k*=0.57[0.42, 0.67])
(Vanwolleghem et al. 2014)	Flanders, Belgium [S]	· Schools (n=6) · Participants (n=52)	EGA-Cycling [VL]	GSV	Land use types (C*k*=[0.47 1.00]): · Commercial · Public and recreational destinations · Heavy industry · Natural phenomena Characteristics of street segment (C*k*=[0.47 1.00]): · Road types · Measurement that slow down traffic Cycling facilities (C*k*=[0.47 1.00]): · Type of cycle lanes · Maintenance cycle lanes Pedestrian facilities (C*k*=[0.47 1.00]): · Maintenance sidewalks

					Aesthetics (C*k*=[0.47 1.00]): · Presence of front yards · Maintenance front yards)
Vanwollegh em et al. (2016)	Flanders, Belgium [S]	· Routes (n=65) · Segments (n=220) · Crossings (n=124) · Cul-de-sacs (n=6)	MAPS-Global version [VL]	GSV	Routes (ICC=[0.03, 1.00]): · Land use types/destinations · Streetscape · Aesthetics and social environment Street Segments (ICC=[-0.01, 0.86]): · Setback and building height · Building height to road width ratio · Sidewalks · Buffers · Bike infrastructures · Building surveillance · Shade · Pedestrian connectivity · Informal paths · Hawkers/shops · High street lights · Low street lights Crossings (ICC=[-0.01, 1.00]): · Crosswalk amenities · Curb quality/presence · Intersection control and signage · Bikes

					· Overpass · Road width · Visibility Cul-de-sac (ICC=[0.76, 1.00])
Verhoeven et al. (2018)	Ghent, Belgium [C]	· Schools (n=12) · Participants (n=204)	EGA-Cycling [VL]	GSV	Land use types: · Commercial destinations · Heavy industry · Public destinations Characteristics of a street segment: · Road types · Speed limit Cycling facilities: · Types of cycle · Width of cycle lane Pedestrian facilities: · Presence of sidewalks · Maintenance of sidewalks Aesthetics: · Trees · Front yards
Wandschneider et al. (2020)	Bielefeld, Germany [C]	· Districts (n=80) · Eligible women (n=892)	Validated tool based on S-VAT and EPOCH [VL]	GSV	· Presence of green area · Condition of the buildings · Condition of the streets

Wilson et al. (2012)	Indianapolis and St. Louis, US [C2]	Street segments (n=369)	ANC [VL]	· GSV · IFS	Land use: · Land use types · Predominant uses · Residential uses · Parking facilities · Recreational facilities · Nonresidential uses Public transportation Street characteristics Quality of environment Sidewalk characteristics: · Presence of sidewalks · Continuity · Width · Curb ramps · Buffers · Alignment/obstructions Shoulder characteristics: · Bike routes or signage · Presences of shoulder
Wu et al. (2014)	Cambridgeshire, UK [C]	Street segments (n=48)	REAT [VL]	GSV	Physical incivilities: · Property level-vandalism to private properties (GAC1=0.87[0.75, 0.99]) · Property level-vacant properties (GAC1=1.00[1.00, 1.00) · Property level-burned out properties (GAC1=0.98[0.93, 1.00]) · Property level-broken windows/doors (GAC1=1.00[1.00, 1.00])

					· Property level-abandoned cars (GAC1=1.00[1.00, 1.00]) · Street level-public area maintenance (GAC1=0.93 [0.82, 1.00]) · Street level-stray dogs (GAC1=0.88[0.78, 0.99]) · Street level-derelict land (GAC1=1.00[1.00, 1.00]) · Street level-illegal parking (GAC1=0.98[0.94, 1.00]) · Street level-dog litter (GAC1=1.00[1.00, 1.00]) · Street level-littered street (GAC1=0.27[0.00, 0.58]) · Street level-vandalism to public property (GAC1=0.96[0.89, 1.00]) · Street level-poor path condition GAC1=0.43 [0.16, 0.71]) Territorial functioning: · Property level-low external beautification (GAC1=0.42[0.20, 0.65]) · Property level-low garden maintenance (GAC1=0.64[0.48, 0.84]) · Property level-low property maintenance (GAC1=0.39[0.15, 0.63]) · Street level-neighborhood watch signs (GAC1=0.83[0.68, 0.98]) Defensible space: · Property level-low defensible space (GAC1=0.80[0.60, 0.99]) · Street level-public parking on street or public court (GAC1=0.66[0.48, 0.84]) · Street level-intense dense properties (GAC1=1.00[1.00, 1.00]) Natural environment: · Property level-trees in front gardens (GAC1=0.91[0.80, 1.00]) · Street level-green/commercial/industrial (GAC1 GAC1=0.96/0.94/1.00[0.88, 1.00]/[0.86, 1.00]/[1.00, 1.00]) · Street level-trees in public space (GAC1=0.82[0.68, 0.96]) · Street level-planted vegetation (GAC1=0.83[0.67, 0.99]) · Street level-green space (GAC1=0.96[0.88, 1.00])

					· Street level-recreational space (GAC1=0.95[0.88, 1.00])
Yin (2017)	Buffalo, New York, US [C]	Areas (n=8)	Unvalidated tool [VL]	GSV	Imageability: • Buildings with non-rectangular silhouettes Enclosure: • % of street wall-same side Human scales: • Long sight lines • Street furniture and other street items • % of first floor with windows • Small planters Transparency: • % of first floor with windows Complexity: • Dominant building colors • Accent colors • Public art
Yue et al. (2022a)	A Chinese city, China [C]	Locations (n=215,760)	Unvalidated tool [CA]	BSV	• Number of people on the street • Percentage of paths • Percentage of roads • Percentage of walls • Percentage of buildings • Number of streetlamps • Number of traffic lights

					• Percentage of trees
Yue et al. (2022b)	67,167 Census tracts, US [N]	Census tracts (n=67,167)	Unvalidated tool [CA]	GSV	• Street greenness (%A=88.7%) • Presence of crosswalks (%A=97.2%) • % of sidewalks (%A=84.5%, F1 score = 0.81) • Single lane roads (%A=88.4%) • Presence of apartment/commercial building (%A=82.4%) • Street lights (%A=88%, F1 score=0.6) • Street signs (%A=82%, F1 score=0.68) • Two or more cars (%A=88%, F1 score=0.79) • Chain-link fence (%A=95%, F1 score=0.45)
Zhang et al. (2023)	Beijing, China [C]	• Streets (n=16,790) • Locations (n=70,437)	Unvalidated tool [CA]	TSV	Architecture (C*k*=0.83): • Abandoned buildings • Half-demolished buildings • Broken structure • Unkempt facades • Graffiti/advertisement • Illegal/temporary structure Retail (C*k*=0.83): • Poor signboards • Poor façades • Roadside stalls • Vacant stores Greening:

					• Overgrown plants • Trash, litter, and junk • Abandoned vehicle • Construction remnant Roads: • Unpaved roads • Broken roads • Trash occupied roads Infrastructures: • Broken infrastructures • Rundown public interface

[a] Study area: [N]—National; [S]—State (e.g., in the US) or equivalent unit; [CT]—County or equivalent unit; [C]—City; [ST] —Street; [Sn] —Multistate; [CTn] —Multicounty; [Cn] —Multicity.

[b] 360 VR, 360 virtual reality video; BM, Bing map; BSV, Baidu street view imagery; CCTV, closed-circuit television; DRV, Daum road view service; GE, Google Earth; GM, Google Maps; GSV, Google street view imagery; IFS, imagery taken in the field survey; TSV, Tencent street view imagery.

[VL], Virtual audits by labors; [CA], Computer-assisted audits.

[c] AP, agreement prevalence; AUC, an area under the receiver operating characteristic curve; Cα, Cronbach's α; Ck, Cohen's kappa statistics; F, F statistic value of variance analysis; Finn's C, Finn's coefficients; Fk, Fliess' kappa statistic; F1 score, an indicator of accuracy in machine learning; GAC1, Gwet's AC1 coefficient; ICC, Intra-class coefficient; IoU, intersection-over-union metric; PABAK—Prevalence-adjusted bias-adjusted kappa coefficient; r, correlation coefficients; Wk, weighted kappa statistics; %A, % of agreement. The built environment attributes without parentheses means, that these studies did not calculate the reliability.

[d] ANC, Active Neighborhood Checklist; BTG-COMP, Bridging the Gap Community Measures Project; CANVAS, Computer Assisted Neighborhood Visual Assessment System; China Urban Built Environment Scan Tool, CUBEST; Environment in Asia Scan Tool–Hong Kong version, EAST-HK; EGA-Cycling, Environmental Google Street View-Based Audit-Cycling to school; EPOCH, Environmental Profile of a Community Health (EPOCH) Photo Neighborhood Evaluation Tool; FASTVIEW, Forty area Study street-view audit tools; IPSI, Inventory for Pedestrian

Safety Infrastructure; Irvine, Irvine−Minnesota inventory; MAPS, Microscale Audit of Pedestrian Streetscapes; NA, Not available; NEWS, neighborhood environment walkability scale； PEDS, Pedestrian Environmental Data Scan; PHDCN, Project on Human Development in Chicago Neighborhoods; POSDAT, Public Open Space Desktop Auditing Tool; QUALITY-NHOOD, QUALITY neighborhood obesogenic potential diagnosis; RBEI, revised block environment inventory; REAT, Residential Environment Assessment Tool; SPACES, Systematic Pedestrian and Cycling Environment Scan; SSO, Systematic science observation; S-VAT, SPOTLIGHT-Virtual Audit Tool; SWATCH, Street Walkability Audit Tool for route Choice analysis; SWEAT-R, Seniors' Walking Environmental Assessment Tool—Revised; Virtual-STEPS, Virtual Systematic Tool for Evaluating Pedestrian Streetscapes; Wisconsin Assessment of the Social and Built Environment, WASBE.

$^{*}p$ value < 0.1; $^{**}p$ value < 0.05; $^{***}p$ value < 0.01.

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