applied sciences

MDPI

Supplementary Material: SEC methodology

Table S1. Three-dimensional evaluation assessment (model SEC) of artificial night light quality [11]

MODEL SEC	DIMENSIONS	FACTORS	INDICATORS	
SUSSTAINABLE CITY LIGHTNING	*LIGHTING QUALITY* 1. SUITABILITY TO EVERYONE	1.1 Psychological	1.1.1 Individual feeling	*subjective indicators*
			1.1.2 Attracting attention	
			1.1.3 Orientation ability	
			1.1.4 Sense of safety	
		1.2 Sociological	1.2.1 Land use	
		1.3 Aesthetic - functional	1.3.1 Site aesthetic	
			1.3.2 Light effect	
	2. ENVIRONMENTAL ACCEPTANCE	2.1 Ecological	2.1.1 Impact on habitats	
			2.1.2 Impact on living creatures	
	3. COST EFFECTIVENESS	3.1 Technologic - functional	3.1.1 Illuminance	*objective indicators*
			3.1.2 Light reflection from the surface	
			3.1.3 Location of lights	
			3.1.4 Appearance of lights	
		3.2 Economic	3.2.1 Electricity cost	
			3.2.2 Light efficacy	
			3.2.3 Installation cost of infrastructure	
			3.2.4 Maintenance cost of infrastructure	

Table S2. Aspects and corresponding questionnaire term possibilities within two extremes [11]

FACTORS	INDICATORS	ASPECTS	QUESTIONNAIRE TERM POSSIBILITIES WITHIN TWO EXTREMES
1.1 Psychological	1.1.1 Individual feeling	• **Attraction**	not attractive-attractive
		• **Pleasantness**	unpleasant-pleasant
		• **Relaxation**	tense-relaxed
	1.1.2 Attracting attention	• **Composition**	simple-complex
		• **Arouse interest**	boring-interesting
		• **Stimulation**	not arousing-arousing
	1.1.3 Orientation ability	• **Overview**	not visible-visible
	1.1.4 Sense of safety	• **Safety**	dangerous-safe
1.2 Sociological	1.2.1 Land use	• **Usage intensity**	not visit – always visit
1.3 Aesthetic - functional	1.3.1 Site aesthetic	• **Space arrangement**	disordered-ordered
	1.3.2 Artificial light effect	• **Fascination**	not fascinating-fascinating
		• **Comfort**	comfortable glare-uncomfortable glare
		• **Compliance**	incompatible-compatible