

# Review of: "Finding the illuminance levels for walkers in a prominent public park in New Delhi during the post-twilight period for healthy visual comfort, security, and other related parameters."

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Potential competing interests: No potential competing interests to declare.

Dr Raja Singh addresses an important issue in terms of safety, subjective perception of safety, usability, visual comfort, gender mainstreaming and economic and environmental impact: Finding the right level of lighting for pedestrian access in public parks.

The paper follows a clear path and is reasonably structured, the methods used are well explained. In the further course of the research, it would make sense to overlay the quantitative measurements with qualitative investigations regarding physiological sensations and light perceptions.

These are my comments:

## Introduction

It should be made clear which functions of lighting are examined and which meanings of lighting are not addressed and why - for example, how design with light influences sensory and aesthetic perception, design values or human emotions.

Lighting designer Richard Kelly identifies three principles of lighting design: "Ambient Luminescence", "Focal Glow" and "Play of Brilliance". Which of these basic types of lighting does this study refer to? The findings of the related article "Lighting as an Integral Part of Architecture" (Richard Kelly, 1952, <https://doi.org/10.2307/773361>) could be noted in this article.

Page 2: Why is it important, what kind of visitors are there (politicians, parliamentarians, judges, bureaucrats...)? It is not related to the topic, so it would be enough to know that it is used by "different people" or "different stakeholders" or similar expressions.

1. visual comfort: It should be noted that this study is limited to Illuminance. In addition to the colour temperature mentioned, several other factors influence the quality of lighting, such as the surface and colour of light-receiving objects, Luminance (light density), colour rendering index (CRI), luminous intensity or luminous flux. The distance to the light source and the direction of illumination are also essential aspects.

4. The negative effects of light pollution should be explained in more detail. Who is affected and how? E.g. insects,

wildlife, but also humans. This is explained in the discussion of the paper, but it should be mentioned in the introduction as it refers to existing knowledge and is not generated in the study.

**Discussion:**

I agree that a low level of lighting evenly distributed along the path would have a better effect on perceived safety. In addition, special places could be illuminated differently, for example to create a spatial effect with light or to highlight special design elements such as sculptures, trees, etc.

Is the greater susceptibility of bollard luminaires to vandalism an assumption or is there evidence to support it?

The conclusion that bollard luminaires should be used to prevent light pollution is too simplistic. There are also post-top luminaires fitted with louvres and reflectors that optimise the orientation of the light beam to provide efficient path lighting while avoiding light pollution. Recessed floor luminaires and other light sources can also be used for orientation. Open space lighting is a complex issue and should be developed by experts in accordance with site-specific conditions.