

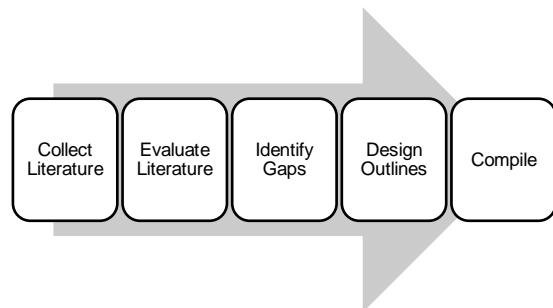
increasing energy demand, the pressure to use green energy, the vast potential of strategic airport locations, and the economic and operational advantages, Piezoelectric Energy Harvesting emerges as a relevant and promising solution. The design of this technology at airports can be a step forward in the effort to achieve greater sustainability and energy efficiency. It is expected to help save energy and reduce operational costs in the long run. The initial investment in this technology can be offset by reducing conventional energy costs and contributing to the company's sustainability goals. In addition, an additional sustainable energy source can improve the reliability of the energy supply at the airport.

Based on the background, problems can be formulated and discussed to build hypotheses for further research: 1) Does energy source affect piezoelectric energy harvesting? 2) Does Material Affect Piezoelectric Energy Harvesting? 3) Does design affect Piezoelectric Energy Harvesting? This article discusses the influence of Energy Sources, Materials, and Design on Piezoelectric Energy Harvesting, a literature review study in energy harvesting technology. This research is expected to provide an overview of what factors need to be considered when implementing Piezoelectric Energy Harvesting at the airport in terms of energy sources, types of materials, and designs following the characteristics of airport activities.

## METHOD

This research is a literature review that studies the theory and the relationship between variables: energy source, material, and design. The literature review is a method that can be employed to carry out research endeavors. The literature review is considered the most authoritative form of evidence. Literature reviews are a systematic process employed to collect information or strategies for addressing specific issues. They entail a systematic

procedure that generates reports to conduct research or concentrate on a specific topic. Nevertheless, the evidence suggests that conducting a literature review might be difficult because researchers must thoroughly understand how to investigate a specific issue to compile a review. According to Zed's research (Kartiningrum, 2015), the literature review is needed as preliminary research to understand emerging societal issues better. Using this research, the researchers hope to gain a deeper insight into the potential application of piezoelectric nanogenerators at airports. In his 2018 research, Cronin states that to create a comprehensive literature review effectively, a writer must meticulously adhere to five distinct steps during the preparation and writing (Cahyono et al., 2019).



This research collects scientific articles from trusted publisher journals with indexes. The library studies are structured and grouped to approach methodological assumptions. The library study is presented inductively and exploratory to provide a clear overview of current literary references to the theme of piezoelectric energy harvesting.

## RESULT AND DISCUSSION

### *Piezoelectric Energy Sources in Airports*

Energy sources for piezoelectric energy are ambient energy sources, usually solar, heat, and vibrational energy. Among these energy sources, vibrational energy is continuously present in nature and man-made structures (Safaei et al., 2019). Mechanical energy generated by the pressure of people or objects has also been shown to be a source of PEH (Abadi et al.,