

**Air pollution in megacities of developing countries:
analytical study of information behavior, search engine usage,
and self-protective behavior in the context of Delhi, India**

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Background: While breathing is an essential human need, globally, millions of people die each year from inhaling polluted air. Due to economic and population growth, low environmental standards, and urbanization, megacities of developing countries such as Delhi, India, are notably challenged by air pollution, with Delhi counting among the most air-polluted megacities on earth. A better understanding of air pollution-related *information behavior* and *self-protective behavior* of Delhi inhabitants may support self-protective measures.

Scope and approach: This research aims to analyze how Delhi inhabitants respond to the environmental risk of air pollution in terms of *information behavior* and *self-protective behavior*. To this end, an online survey is complemented by a search engine study which delivers a granular insight into *Google Search* as an information source on air pollution.

Key findings and conclusion: Analysis of *information behavior* found that most respondents trusted public and private outdoor air quality information providers to the same degree with almost half preferably being informed by employing AQIs. Moreover, the majority of participants informed themselves several times per week about outdoor air pollution levels with one-fifth of respondents rating social media as the individually preferred information source.

The search engine study demonstrated that search activity for four out of the five studied topics increased significantly during the recent five years with the topics *face masks for self-protection* and *air pollution* being the most popular. Besides, four topics' search activity exhibited distinct daily patterns with English being the most popular search language.

Researching *self-protective behavior* disclosed that one-fifth of respondents mostly or always wore face masks when outdoor air pollution was high, while approximately 39% of face mask-wearers wore ineffective face mask types. One-fifth operated an air purifier, and nearly 10% had an air quality monitor. Two-thirds reduced outdoor activity and indoor ventilation when air pollution was high. Besides, a Binary Logistic Regression analysis revealed significant associations between various independent variables and self-protective measures.

Keywords: air pollution, air quality, self-protective behavior, information behavior, search analytics, search engine usage, Google Trends, Delhi, survey