

As India struggles with scale-defying air pollution, are purifiers the answer?

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Air purifiers, once a domain of embassies and five-star hotels, are gradually finding takers outside Delhi-NCR

According to a TechSci Research report, the Indian market is expected to be worth \$209 million by 2021

But India has no official guidelines for indoor air pollution. Neither does it have a regulatory body for air purifiers

Even so, private players seem poised to make a meal of policy failure as India's air quality becomes the worst on the planet



On a spectrum ranging from green to maroon, New Delhi achieved Vantablack status in the early hours of 8 November 2018.

Different countries may have different parameters for measuring air quality index (AQI), but the colour codes are standard: green is good. Yellow, moderate. Maroon straddles anything from 'hazardous' to 'emergency'. But what colour do you associate with an [AQI of 2000](#) (so off the charts, one can only liken it to a forest fire) when the hazardous limit in India is 500?

Answer: *Vantablack*. The darkest colour, one that absorbs 99.9% light – which also sums up the visibility over Delhi University's North Campus a day after Diwali.

The situation may not be as apocalyptic in Mumbai. Yet. But in the fourth aisle of a suburban Croma outlet, in a space once occupied by digital cameras (RIP), a gleaming, champagne-coloured device stands as a portent to our grotty times. The Honeywell Air Touch i8 and its neighbours – five Philips and a Blueair – attract a gaggle of customers who've wandered into the air purifier territory.

Two sales executives in the consumer electronics store hurry over, using buzzwords brands pay big bucks to market: 'VitaShield IPS'. 'HiSiv'. 'HEPASilent'. This one has a thicker HEPA (High Efficiency Particulate Air) filter. That one has more ACH (air changes per hour). This one is better for a larger area.

"But if you ask me ma'am, these are the best," says one, pointing to the Philips models. "Because they have a Clean Air Delivery Rate (CADR) of 0.02. Other brands have a 0.2 CADR."

Wait. If CADR is the volume of air filtered in a minute, 0.02 is laughable in a market where higher CADRs are collar-popping material. Is it really CADR you're talking about?

One executive flips through the company brochure, then replies: “Sorry, I meant EFS (effective filtration size). HEPA filters usually keep out particles measuring 0.2 microns and above. This means Philips can filter smaller particles. There’s also a three-year extended warranty offer...”

A similar scenario plays out in Vijay Sales, another electronics retail chain. Except here, a Philips sales assistant in a crisp blue shirt and khaki trousers talks about the brand’s AeraSense display – a “PM 2.5 reading in real-time, which others don’t have”...

“...are you offering an extended warranty?” the imp in me interjects.

“The product comes with a default two-year warranty ma’am,” the executive smiles.

“But Croma is offering a three-year extended warranty as a Diwali offer.”

“Oh... please give me few minutes. I’ll call the company and ask if we can make a similar offer.”

Three minutes later: “Ok ma’am, I’ve confirmed. We can also offer a three-year extended warranty. So, may I have your number if you’ve decided?”

And just like that, Philips has mastered the art of the lure in a country obsessed with warranties.

Outdoor vs indoor pollution

This isn't about Philips or extended warranties. What this is about, is an increasingly-crowded market where any differentiation flies. If that means five-year warranties, or jargon, or claims about patented technology, so be it.

The Indian air purifier industry is on the cusp of breathing easy amidst a national air pollution crisis. You've probably been inundated with news about the alarming surge in particulate matter (PM) count, so we won't hammer an already-nailed coffin. Let's jump to (a) the data that carries this market on its shoulders, and (b) the business of air purifiers.

Fine print

WHO data for India points to an indoor air crisis in rural centres or among the urban poor – both of which aren't target groups for an industry whose unit prices range from roughly Rs 8,000 to Rs 1,00,000-plus (\$110 to \$1371-plus).

It took a 2015 visit to India by former US president Barack Obama (and the subsequent purchase of 1800 BlueAir purifiers by the US embassy) to kick this market into action. Considering this is still a nascent industry, official reports are hard to come by. But regardless of the in-house estimates or independent data you come across, annual unit sales are doubling (at the very least).

According to US-based market research firm TechSci Research (which has a Noida outpost), the Indian air purifier market is expected to be worth \$209 million by 2021. Then there's the outlook report by market research firm BlueWeave Consulting, which estimates unit sales to jump 5.7 times from 754,000 units in 2017 to 4,339,000 units in 2024, with a CAGR of 24% in terms of volume.

“This is despite sales being season and Delhi-NCR driven. Apart from the metros, we’re seeing sales in Pune, Meerut, Lucknow, Agra, Kanpur, Dehradun,” says BlueWeave consulting director Laltu Sinha. Dehradun’s emergence as a manufacturing hub, coupled with a topographical ‘bowl’ effect similar to Delhi’s, could have something to do with this surprise mention.



But here’s the thing: when we talk of worsening air quality, we allude to outdoor or ambient air. Air purifiers, by scope and function, are meant to filter indoor air. Never mind the government’s Chaplinesque move to install Wayu (Wind Augmentation PurifyYing Unit) devices [across some Delhi intersections](#). Its capacity to purify air within a 500 square-metre radius means the megapolis would need as many Wayus as termites to a mound.

So, how bad is indoor or household pollution? Terrible, claim air purifier brands. And they're not wrong. There's no dearth of studies on indoor air, but since WHO is the gold standard, let's focus there.

3.8 million people across the world [die](#) each year from diseases related to indoor pollution. India suffers an [11%](#) proportional mortality rate from chronic respiratory diseases, with [70-89 deaths per 100,000](#) being attributed to household pollution. 59% of our population is primarily reliant on polluting fuels, or biomass.

“When indoors, there's the danger of volatile organic compounds (VOCs), formaldehyde, and carcinogenic agents from cleaners and sprays. Indoor air is typically 5-10 times worse than ambient air pollution,” says Sudhir Pillai, GM of Honeywell India's Homes division. Pillai is echoed by Philips India's marketing director and business head Gulbahar Taurani, and BlueAir country head Arvind Chabra. The clarion call of indoor air pollution being worse than ambient pollution is a tie that binds competitors.

But here's why fine print matters. WHO data for India points to an indoor air crisis in [rural centres](#) or among the [urban poor](#) – both of which aren't target groups for an industry whose unit prices range from roughly Rs 8,000 to Rs 1,00,000-plus (\$110 to \$1371-plus).

The naysayers

“First, there are no guidelines for indoor air pollution. Which means there's no quantification of acceptable levels of certain household pollutants,” says Dr Chirashree Ghosh, an aerobiologist and associate professor with the department of environmental studies, Delhi University.

What India has is the National *Ambient* Air Quality Standards (NAAQS), which lists acceptable concentrations and measurement methods for 12 pollutants (PM 2.5, PM 10, sulphur dioxide, nitrogen dioxide, ozone, lead, carbon monoxide, ammonia, benzene, benzo-pyrene, arsenic, and nickel). There are no parameters for measuring pollutants other than these, leave alone doing so in enclosed spaces.

Dr Ghosh's 2014 pilot study on indoor air quality across Delhi's economic zones does reveal, however, that questionable structural materials and increasing tendency to leave windows closed could be bigger contributors to urban indoor pollution than, say, a dusty carpet. This also explains [sick building syndrome](#).

DR CHIRASHREE GHOSH, DEPARTMENT OF ENVIRONMENTAL STUDIES,
DELHI UNIVERSITY

“There's also no understanding of the implications of poor urban planning, least of all when it comes to respiratory issues,” she outlines. “In the macro picture, HEPA filters are temporary solutions at best.”

In March this year, [news trickled in](#) about the government spending Rs 36 lakh (\$49,327) to install 140 air purifiers across seven agencies, including the PMO. The Central Pollution Control Board (CPCB) wasn't one of them.

“The scientists there aren't using air purifiers. Neither am I,” chuckles Dr SK Tyagi, a former CPCB member who serves on the board of the Indian Association for Air Pollution Control. Yes, he concedes, VOCs are a concern because air fresheners, deodorants, and cleaners that were once luxury items are no longer so, meaning respiratory tract irritants and the count of carcinogenic compounds may have spiked in urban homes.

“But you can’t say indoor pollution is worse than ambient pollution. Context matters. In the industrial belt from Dhanbad to Durgapur, for example, which do you think would be worse?”

Meanwhile Dr Virendra Singh, editor of the peer-reviewed medical journal *Lung India*, underlines the need for double-blind, placebo-controlled studies in the National Physical Laboratory to substantiate air purifier claims. Now, since India has no indoor air pollution parameters, there’s no regulatory body akin to the Bureau of Indian Standards (BIS), which other consumer goods adhere to. Multinational companies (MNCs) therefore brandish international certifications like the European Centre for Allergy Research Foundation (ECARF) or the Association of Home Appliance Manufacturers (AHAM) from the US. There’s no sure shot way to prove whether products tested abroad would be as effective in Indian conditions.

Number crunching

But none of this matters. Here’s why.

In December 2016 – when Honeywell India officially started selling air purifiers – 95% of its business came from Delhi-NCR. In under two years, this figure is now down to 75%, with Mumbai being an emerging driver alongside Bengaluru. And while Honeywell GM Sudhir Pillai doesn’t divulge unit sales figures, he points to as much as a threefold increase (year-on-year) in overall sales.

"In 2016, most purifiers averaged Rs 30,000. You can now get a purifier for half that amount. Even water purifiers didn't see such price competitiveness in such a short span."

SUDHIR PILLAI, GM, HOMES, HONEYWELL INDIA

It didn’t take Honeywell India long to realise that picking and choosing from its China portfolio wouldn’t bode well for its India plans. “Everything from room size

and type, price consciousness, and after-sales demands differ greatly from China to India. In 2016, most purifiers averaged at Rs 30,000 (\$411.2). You can now get a purifier for half that amount. Even water purifiers didn't see such price competitiveness is such a short span," he explains.

Price competitiveness is a game even BlueAir conceded to. The Swedish MNC, otherwise well-placed in the premium segment, introduced its Rs 15,000 (\$205.6) Joy S model as an Amazon India exclusive. And though he too declines to divulge market share or sales volume details, country head Arvind Chabra admits that Joy S is BlueAir India's best-selling home air purifier.

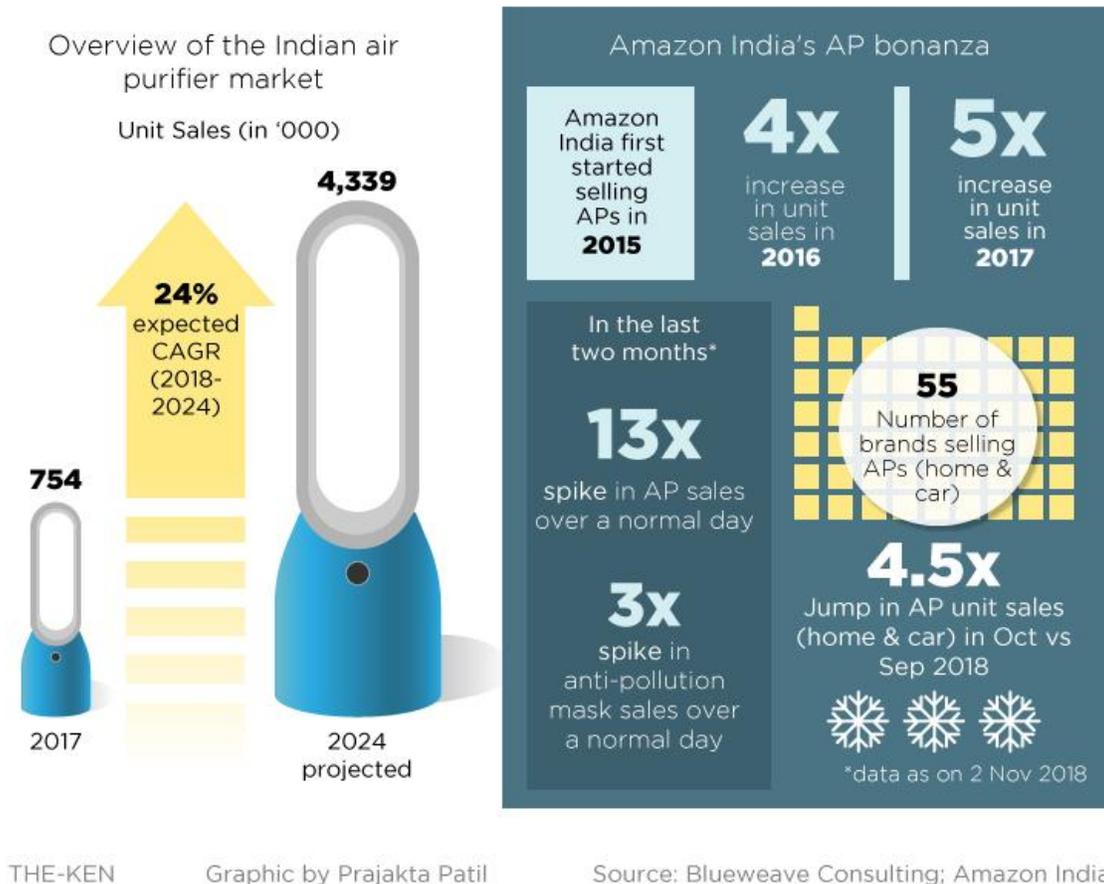
Then there's Philips, which introduces 1-2 air purifier series each year and has seven in total since 2012, the year it entered the Indian market. Its marketing director Gulbahar Taurani, however, is partly forthcoming. Quiz him about the overt reliance on winter or festive sales, and he responds in the affirmative.

"There is supply chain pressure towards the end of the year, and a lull in other months. The air purifier division's contribution to Philips India's business is in single digits. It'll take a few years to reach a tipping point," he says.

Off-season stagnation notwithstanding, online sales point to gradual adoption outside north India. Data from Amazon India – which has 55 air and car purifier brands on its roster – reveals a 13-fold spike in the last eight weeks alone. The cities accounting for this demand? Delhi-NCR, followed by Mumbai, Bengaluru, Hyderabad, and Chennai. And the top brands in the home air purifier segment? Philips, Honeywell, and Xiaomi.

CASTLES IN THE AIR

The Indian air purifier (AP) industry, which once had few players and was relegated to embassies, is growing manifold as India's air quality worsens



Mumbai is considered a tough market to crack. As BlueWeave's Sinha surmises, people here are more price-conscious than the average Delhi-NCR customer. And unlike the Bengaluru customer, who'd be more likely to warm up to an 'anti-allergen' air purifier (those are dropping like flies now), Mumbai counterparts would expect the sea breeze to clean the filthy air on everyone's behalf. Or not think twice about indoor air pollution at all...

...would they?

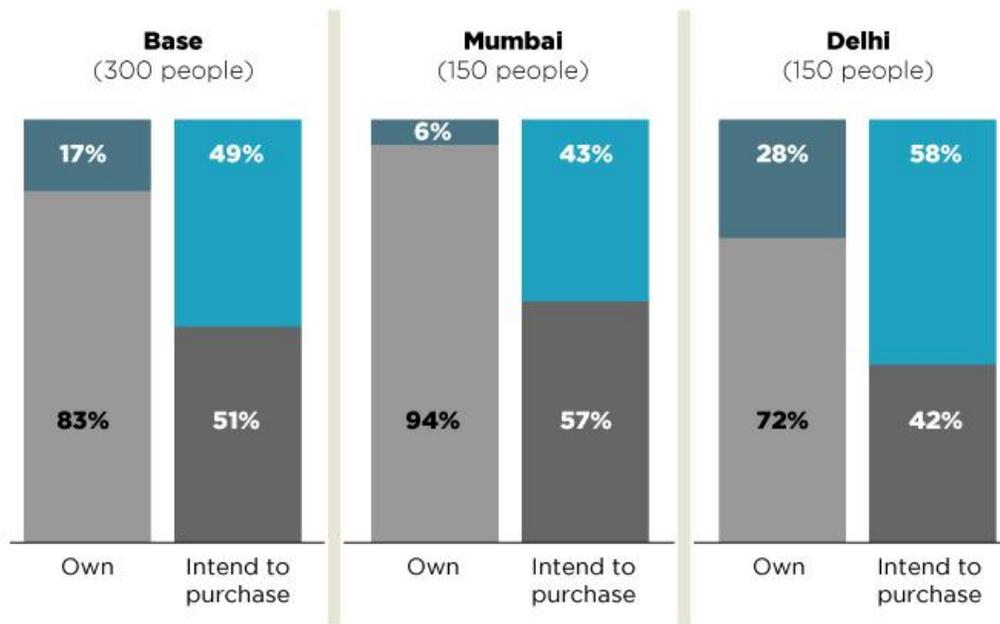
I decided to get a dipstick sense of air purifier awareness in India's two most polluted mega cities. And so, Thinking Hats, a national consumer insights company, conducted a quantitative study for *The Ken* via its mobile platform APptitude. 300 people, both men and women in the age bracket of 30-50 years, more or less confirmed one's suspicions of a potential major market outside Delhi-NCR. Although 49% of respondents overall were inclined to buy an air purifier, the intention was higher in Delhi (58%) than in Mumbai (43%). But what caught the eye was the seasonal purchase indicator: as opposed to the typically winter-driven market of Delhi-NCR, 74% of Mumbaikars said they'd rather buy an air purifier in summer.

THE KEN-THINKING HATS SURVEY

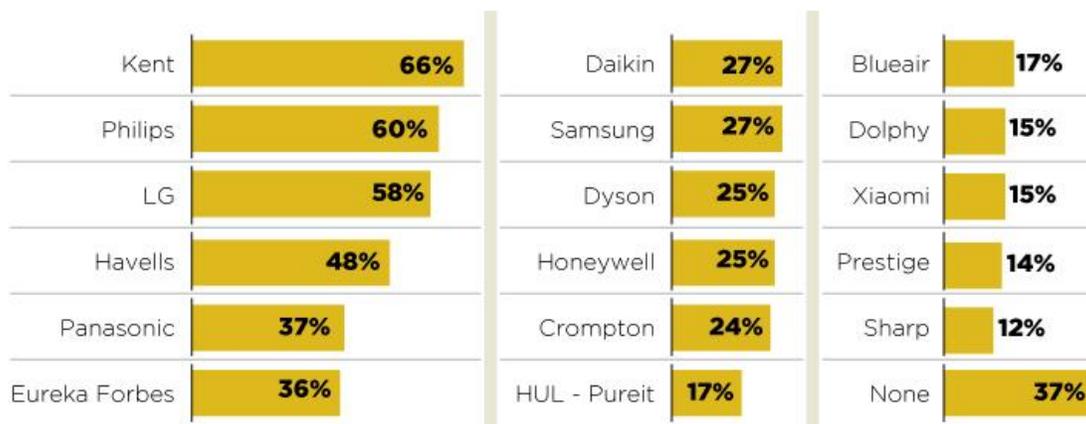
We surveyed 300 people in Delhi-NCR and Mumbai to gauge what people in India's two most polluted mega cities make of air purifiers. Here's what we found:

Ownership and Intention to purchase

Yes No



The air purifier brands people know (responses in %)



Is this reflective of a larger trend? In an industry this fragmented, one can only wait and watch.

No hot air, please

Debatable scope, unverifiable claims, perceived luxury. These may be the seeming hallmarks of the Indian air purifier sector in 2018 – and few call them out like the CEO of Breathe Easy Barun Aggarwal does. Breathe Easy is a start-up offering custom filtration solutions for home and corporate users, meaning Aggarwal has tested 28 portable air purifiers across 15 criteria. On the anvil now is a request from UK-based Dyson to test its device for the Indian market.

Aggarwal is disinclined.

“They want to put in \$500 million in the Indian market, but all the model has is a good fan and good looks. I’d rate it a 1 on 10 for function,” he says. Everyone, he adds, wants a piece. “Prestige, Havells, and even Usha-Shriram have gone to China, picked up a product that looks half-decent, slapped their labels, and marketed the shit out of it. It’s almost out of control.”

Alright, so we know what to look for in an air purifier – air changes per hour, clean air delivery rate, and square foot coverage. But how do you gauge component quality (coarse dust filter, HEPA, and activated carbon) when there’s no regulatory body yet in India?

The [European Norm](#) (or EN 1882) for HEPA standards classifies filters based on their ability to trap airborne particles of different sizes. So while an E10 filter, which is the lowest rung, retains 85% of particles, a U17 – the highest tier – traps

99.99% of penetrating contaminants. For the home purifier market, an H13 or H14, which fall in the middle, is considered top notch enough.

An activated carbon filter with potassium permanganate is considered a cut above the rest due to better absorption of VOCs and odours, but this isn't a make or break. What also matters is a fan that'd suck in air from all directions, and a casing secure enough to ensure there are no air leaks.

“Avoid products with jargon like ‘Plasmacluster’ or ‘active oxidation with Vitamin C’. And don't consider devices that use ionisation or active filtration, because these release byproducts like ozone,” Aggarwal warns.

BARUN AGGARWAL, CEO, BREATHE EASY

Mumbai's AQI crossed 300 on the night of Diwali. As I type this, the PM 2.5 count is 166, but feels – and looks – worse due to the metro rail construction. Is it time to buy an air purifier to keep out the fine dust settling in my ground floor flat? Or should one wait for policy failure to fully translate into product indispensability...

“...ma'am, we're offering a two-year warranty which includes free HEPA replacement. No other mid-range brand [sic] has this,” offers a Kent brand sales executive in an outlet of electronics retailer Kohinoor, a stone's throw away from Vijay Sales.

Maybe, just maybe, it's assurances like these that keep an industry going in these grotty times.