HEATAWARE SG Report

2026

Partnered With:

Supported By:

Foreword

As Project Lead for HeatAware SG, I am proud to present this report as a culmination of the community-driven efforts to understand and address indoor heat exposure among Singapore's heat-vulnerable communities, especially our senior community, who have built this country from its humble beginnings.

This initiative would not have been possible without the dedication of our partners. We extend our deepest gratitude to **SL2 Impact**, whose deep community networks and facilitation enabled meaningful outreach and data collection. To the **ETHOS Project at Griffith University**, we are grateful for your generous collaboration with us and for sharing your scientific expertise, past deployment experiences, and equipment. We also thank **PT Nusa Aksara Teknologi** for their expertise in IoT development and software integration, adapting the borrowed system to Singapore's local context.

HeatAware SG is an initiative of Sustainable Living Lab (SL2), an ecosystem of organisations that design and implement solutions to navigate climate, societal, and digital transitions. Active across Asia, the US, and beyond, we combine foresight, technology, and grassroots engagement to turn complex challenges into real-world outcomes where sustainability can be lived out.

This report represents not just data, but the trust of the 201 participants who shared their experiences and the 54 households who opened their homes to us. It is our hope that these findings serve as a foundation for meaningful action.

Russell Fock
Project Lead, HeatAware SG

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Executive Summary

Singapore faces the dual threats of a warming climate and an ageing population: annual mean temperatures could rise by up to 5°C by 2100, while citizens aged 65 and above made up 20.7% of the population in 2025, up from 13.1% in 2015, and are projected to reach one in four by 2030. With age, the body's ability to regulate temperature declines, directly increasing the number of individuals vulnerable to heat-related illness. Prolonged heat exposure can lead to cramps, exhaustion, and in extreme cases, heat stroke, syncope (fainting), and edema (swelling). Hence, this convergence directly increases the number of individuals vulnerable to heat events.

HeatAware SG

Singapore's first community initiative is designed to help seniors aged 50 and above become more aware of indoor heat and better equipped to protect themselves. Between August 2025 and February 2026, there were two concurrent conducts:

Conduct 1: Heat Awareness Surveys (n=201)

112 respondents (~56%) had never heard of a heatwave, while 141 (70%) expressed concern about heat impacting their health. Residents feel the effects of heat without the awareness or vocabulary to recognise and respond to it effectively.

Conduct 2: Sensor Deployment (54 households, 646,300 readings)

Indoor sensor readings were analysed using the Heat Index (the 'feels like' temperature combining air temperature and humidity) and compared with an outdoor Heat Index reference of 31.1°C (derived from NEA's Changi weather station mean of 27.4°C and 84% relative humidity). The mean indoor Heat Index of 32.02°C sits at NOAA's "Caution–Extreme Caution" boundary, with 50.5% of all 646,300 readings falling in the Extreme Caution band. The gap was most pronounced overnight: while outdoor conditions eased to an estimated 24°C Heat Index, indoor conditions averaged 31.2–31.9°C, showing a gap of up to +7°C at the hours when residents most rely on cooler conditions to rest and recover.

Through this community initiative, a clear mandate emerges: Seniors are unaware of the risks heat may pose to them, yet they are concerned about the increasing heat they feel. The data confirms that indoor heat is the norm, not an exception, and that humidity makes the heat feel significantly worse than air temperature alone suggests. Granular, in-home monitoring is not only feasible but essential, revealing exposure patterns that national weather data cannot capture. HeatAware SG has established a baseline understanding, validated the methodology, and built the community trust necessary for impact. The data no longer asks if indoor heat is a problem, but how quickly and at what scale Singapore will act to protect those most vulnerable.

Introduction

The Impending Dual Threat of Heat & Age

Singapore's Meteorological Service Singapore (MSS) declared 2024 as the country's warmest year on record, tied with 2019 and 2016, with an annual average temperature of 28.4°C. (National Environment Agency, 2025). The warming trend continued in 2025, which ranked as the eighth-hottest year on record despite the cooling influence of La Niña (Qing, 2026). That year saw the hottest June and November on record, along with 29 days of high heat stress, up from 21 in 2024 (Qing, 2026). According to Singapore's Third National Climate Change Study (V3) by the Centre for Climate Research Singapore (CCRS), annual mean temperatures could rise by up to 5°C by 2100, with daily maximum temperatures potentially increasing by up to 5.3°C (Centre for Climate Research Singapore, 2024). Furthermore, Singapore's Department of Statistics indicates that Singapore's total population grew by 1.2% in 2025; the proportion of citizens aged 65 and above has already reached 20.7%, up from 13.1% in 2015, and is projected to reach 1 in 4 citizens by 2030 (Singapore's Department of Statistics, 2025). Singapore's population is ageing while climate is warming, a convergence that directly increases the number of people vulnerable to heat events.

The human body can adapt to various climates and environments, though there are well-defined limits on how much heat an individual can tolerate, which will decline with age and illness (Kovats & Hajat, 2007). Coupled with increased exposure to hot and extreme weather events, this would also reduce individuals' psychological well-being by reducing the amount of physical activity they engage in (Zhang et al., 2023). Seniors who lack heat awareness may be even more sensitive to hot weather, making them more susceptible to the adverse mental effects of heat (Guo et al., 2025). As we age, our body’s ability to maintain thermoregulatory control and physiological adaptability will decline, making our senior population more vulnerable to heat-related illness (Awad et al., 2025).

A National Effort

In response, Singapore currently employs a comprehensive, multi-agency strategy to combat urban heat by blending infrastructure, building design, and public health policy. Key initiatives include the HDB Green Towns Programme, which retrofits blocks with cool roofs and vertical gardens (Housing & Development Board, 2025); mandatory Green Mark Certification for new public-sector buildings (Singapore Green Building Council, 2021); and a National Heat Stress Advisory that provides public health guidelines (Meteorological Service Singapore, 2023). Research institutions such as the NUS Urban Climate Lab are also critical to assessing the Urban Heat Island effect (NUS Urban Climate Lab, 2024), with initiatives like the Digital Urban Climate Twin (DUCT) simulating future scenarios to inform policy (Begum, 2024). These efforts are further strengthened by Singapore’s decision to establish a dedicated national “Heat Resilience Office” as part of its expanding climate adaptation strategy (Begum, 2026). However, despite these national-level efforts, a critical gap remains: the absence of a household-level early warning system for heat risks.

HeatAware SG

HeatAware SG is a community initiative that aims to address this gap by being the first to measure indoor heat risks directly and provide real-time alerts and protection for a key vulnerable group: seniors aged 50 and above living in Singapore's public Housing Development Board (HDB) flats. This is done by getting a baseline understanding of public heat-awareness knowledge and collecting data on indoor temperature and humidity levels in HDB flats occupied by seniors. At the national level, the initiative supports the Singapore Green Plan 2030 and the UN SDGs 3 (Good Health & Wellbeing), 10 (Reduced Inequalities), 11 (Sustainable Communities), and 13 (Climate Action).

Objectives

Enhance **heat risk awareness** among vulnerable communities through participatory data collection.

Empower vulnerable residents with **real-time, personalised heat alerts and actionable self-cooling guidance.**

Generate **granular household-level heat data** to inform broader climate resilience and urban cooling strategies.

Intended Outcomes

Increased adoption of user-friendly, low-cost self-cooling behaviours.

Improved understanding of personal heat-health vulnerabilities among senior participants.

Reduced incidence of preventable heat-related health risks among participating households.

Support urban heat island (UHI) research for climate-resilient urban planning.

Drive lasting reductions in household energy use and carbon emissions.

From August 2025 to February 2026, HeatAware SG operated in two concurrent parts:

- Conduct heat awareness surveys and offer heat-health advice via leaflets and quizzes to gather critical data and improve heat-risk awareness among Singapore's senior population;
- Deploy temperature and humidity sensors in seniors' HDB homes to monitor real-time indoor temperature and humidity levels, and send alerts with personalised cooling guidance when heat levels become potentially unsafe.

Conduct 1: Heat Awareness Surveys

To gain a better understanding of our senior population's perception of heat, a survey was conducted between November 2025 and January 2026 to assess general heat awareness and the most common cooling strategies used (*Appendix 1*).

Working with our outreach partner, SL2 Impact, which runs the largest repair movement in Singapore: Repair Kopitiam, these surveys were conducted at multiple locations across the country during their monthly community repair meetups (Figures 1 & 2).

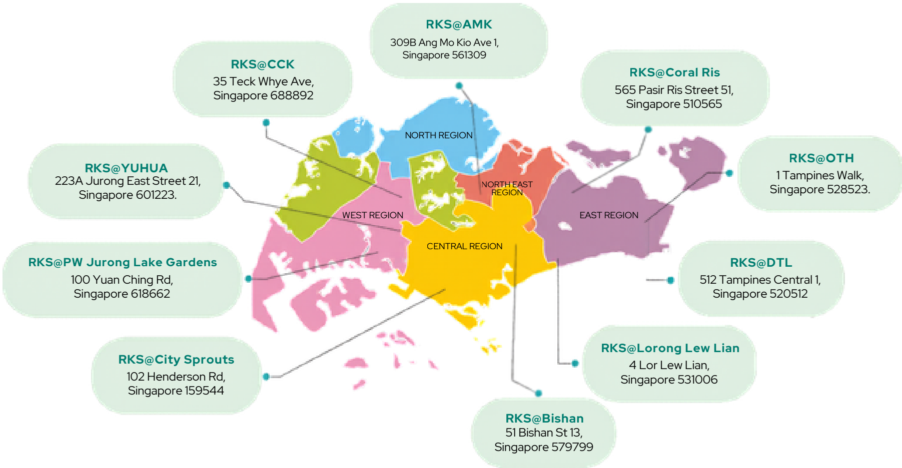

Figure 1: Repair Kopitiam’s 10 monthly community repair meetup locations

A total of 201 responses were collected, primarily targeting seniors in HDB households. Of these, 187 respondents were aged 50 and above, with 170 residing in HDB flats (including 1-room, 2-room, 3-room, 4-room, and 5-room/Executive units).

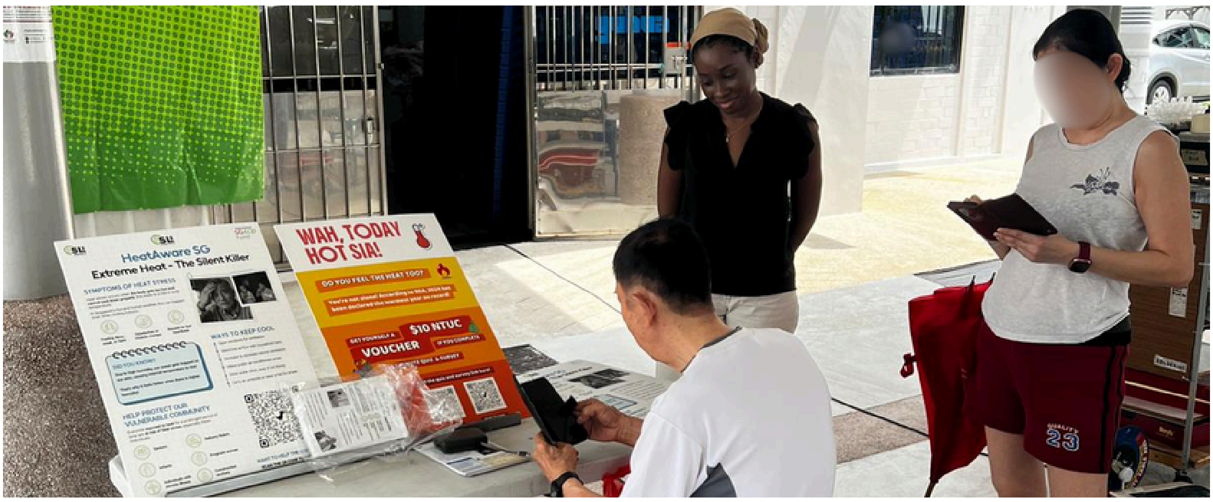

Figure 2: One of several community engagements to collect survey responses

Findings from Conduct 1

Data from the respondents revealed critical insights into the heat experiences of senior residents in Singapore:

- **A critical awareness gap exists:** Across all 201 respondents, 112 (~56%) have never heard of a heatwave, and 100% are not aware of the definition. This lack of awareness is even more pronounced among those experiencing discomfort, where of the 70 respondents who indicated their homes are "uncomfortable" or "very uncomfortable" on hot days, 50 (~71%) have never heard of a heatwave. This reveals that while residents feel the heat, they lack the vocabulary and risk awareness to recognise dangerous heat events, leaving them vulnerable and unprepared.

- **Natural ventilation is insufficient during peak heat:** Among the 70 respondents who are "uncomfortable" or "very uncomfortable", 59 (~84%) keep windows open most of the day, yet still suffer from heat. This suggests that relying on airflow alone is insufficient during extreme heat periods, and that residents may be exposing themselves to hot outdoor air without realising it. It also suggests that passive cooling behaviours may be insufficient and other low-cost, affordable cooling solutions are required.

- **Low Air Conditioning (AC) usage correlates with discomfort:** Of the 174 respondents reporting any level of heat discomfort, 86 (~49%) use their air conditioning "never", "occasionally" or "rarely". Despite most HDB flats now being fitted with AC units, this pattern may stem from a combination of factors: behavioural habits, a cost-saving mentality, environmental awareness, or cultural beliefs around health and acclimatisation. Regardless of the underlying reasons, the infrequent use of AC leaves residents exposed to potentially dangerous indoor temperatures. This underscores the urgent need for sustainable cooling innovations that are affordable, culturally acceptable and do not rely solely on active mechanical systems.

- **Passive cooling measures are underutilised:** Only 70 (roughly 35 per cent) of 201 respondents use curtains or window shades to block heat. This suggests a significant gap in awareness regarding preventive cooling strategies. Rather than mitigating solar gain before it enters the home, residents, particularly seniors, tend to rely on reactive cooling methods such as air conditioning, fans and cool showers. This highlights a critical opportunity for education: many residents may not realise that simple, low-cost modifications to their environment can be just as effective as mechanical cooling in maintaining a safe indoor temperature.

- **Housing orientation influences thermal comfort:** Among 70 respondents who are uncomfortable on hot days (61 "uncomfortable" and 9 "very uncomfortable"), North-facing (18 respondents, 26%) and West-facing (15 respondents, 21%) homes are the most affected. However, West-facing homes experience more heat, making up 21% of uncomfortable respondents but 33% of the "very uncomfortable" category, due to harsh afternoon sun. In contrast, North-facing homes face discomfort from indirect sunlight and less wind during certain seasons. These findings suggest that both orientations may require targeted retrofits, such as solar films or external shading, to address increased afternoon heat.

- **Health concerns are high despite limited action:** Across all 201 respondents, 141 (70%) are "very concerned" or "somewhat concerned" about heat impacting their health. Despite recognising heat as a health threat, most seniors are not taking adequate action, possibly due to cost, lack of awareness, or misconceptions about what measures may help to cool their homes.

Limitations of the Survey

Several limitations should be noted:

- **Window orientation uncertainty:** Many participants were unsure of their home's window orientation, making it difficult to draw precise conclusions about directional heat exposure.

- **Subjective thermal comfort:** Individual perceptions of thermal comfort vary widely, presenting a challenge for objective analysis.

- **Unquantified home clutter:** Factors such as home clutter may influence heat retention but are difficult to quantify objectively.

- **Skewed housing sample:** The sample was skewed toward residents of larger HDB flats, with 166 of 201 respondents (83%) living in 3-room, 4-room, or 5-room/Executive units. As a result, seniors in smaller 1- and 2-room flats, especially rental units, were underrepresented, and the findings may not fully reflect the experiences of those in more vulnerable housing situations.

Conduct 2: Heat Monitoring Systems Deployment

To gain a real-time understanding of indoor heat exposure, temperature and humidity data were collected using Internet of Things (IoT) sensors developed by the ETHOS Project at Griffith University. These were borrowed and reprogrammed for localised use. These sensors were deployed island-wide from November 2025 to February 2026 across 54 voluntary HDB households (Figure 3) with occupants aged 50 and above, drawn from the 201 survey respondents, to ensure the data collected reflected the experiences of Singapore's senior population.

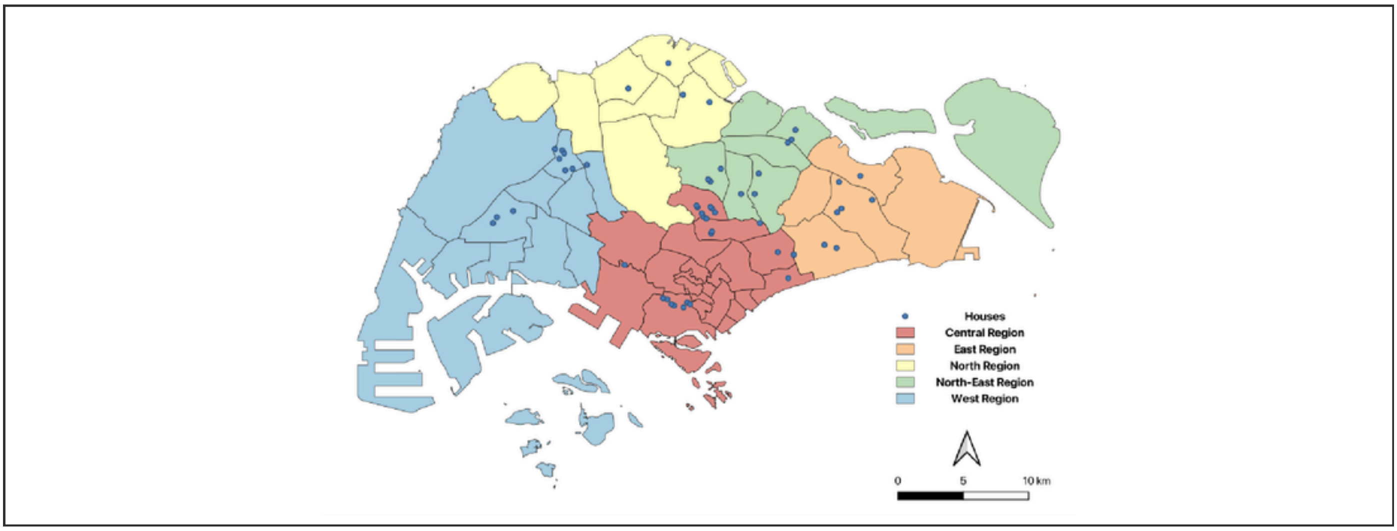

Figure 3: Location of the 54 HDB houses where the sensors were deployed

Each household had one base station and three sensors (*Appendix 2*) installed for 30 days to monitor temperature and humidity in at least three areas in the household (living room, kitchen, main bedroom, guest bedroom, study and dining room). The system is capable of holding up to four sensors and was designed to send alerts with personalised cooling guidance when indoor heat levels became potentially unsafe. Further information about the system's design and thermal model may be found in the ETHOS Project's publication (Oberai et al., 2025). All thermal analysis in this section is conducted using the Heat Index — the "feels like" temperature that combines air temperature and relative humidity — as the primary metric of indoor heat exposure.

Heat Index: The Bigger Picture

The Heat Index (HI), commonly referred to as the "feels like" temperature, combines air temperature and relative humidity and is the internationally recognised measure of human thermal stress. This report uses the Rothfusz regression, the standard adopted by NOAA's National Weather Service (National Oceanic and Atmospheric Administration, 2023). At the dataset mean of 28.33°C and 73.8% relative humidity, the mean Heat Index is 32.02°C (Table 2), indicating a 3.69°C above the thermometer reading, and precisely at the boundary between NOAA's Caution and Extreme Caution categories.

For seniors, this boundary carries weight. Ageing reduces sweat production and cardiovascular efficiency. Many common medications prescribed to older adults can further impair the body's ability to regulate temperature. Conditions that a younger adult might manage sit at a meaningfully different risk level for an older resident spending most of their day at home.

NOAA Classification	Heat Index	Health Risk
Extreme Danger	≥ 52°C	Heat stroke is imminent.
Danger	39–51°C	Heat cramps and exhaustion are likely; heat stroke is probable.
Extreme Caution	33–39°C	Heat cramps and exhaustion are possible; risk of heat stroke with continued exposure.
Caution	27–32°C	Fatigue possible with prolonged exposure; heat cramps possible.
No Concern	< 27°C	No meaningful heat stress.

Table 1: NOAA/NWS Heat Index Categories and Health Risk (National Oceanic and Atmospheric Administration, 2023)

Outdoor Temperature Reference

To understand how indoor heat compares to outdoor heat, this report uses data from Singapore's Changi climate station. While four other climate stations also exist (Paya Lebar, Seletar, Sembawang, and Tengah), only Changi had monthly mean data available for the deployment period, making it the most suitable benchmark (Meteorological Service Singapore, 2026). Changi recorded an average air temperature of 27.4°C. Since the weather bureau does not publish a "feels like" temperature directly, we calculated the outdoor Heat Index using the Rothfusz regression, combining the recorded air temperature with the November–February mean relative humidity of approximately 84%, consistent with long-term climatological records (Singapore Department of Statistics, 2026). This yields an outdoor "feels like" temperature of **31.1°C**. This number is used only to compare indoor and outdoor conditions, and does not constitute a danger warning, safety threshold, or claim about health outcomes.

Data at a Glance

Metric	Value	Notes
Total households monitored	54	Deployed across Singapore (Figure 2)
Total sensor-room deployments	162	3 sensors per household
Total individual readings	no 646,300	10-minute intervals throughout a 30-day deployment period
Deployment period	Nov 2025 – Feb 2026	Monsoon / inter-monsoon season
Outdoor Heat Index Reference	31.1°C	NEA's Changi Station mean during the deployment period
Overall indoor mean Heat Index	32.02°C	Median: 32.0°C
Overall indoor mean Relative Humidity (RH)	73.8%	Median: 74.4% | Range 31.6–95.3%

Table 2: Dataset Summary

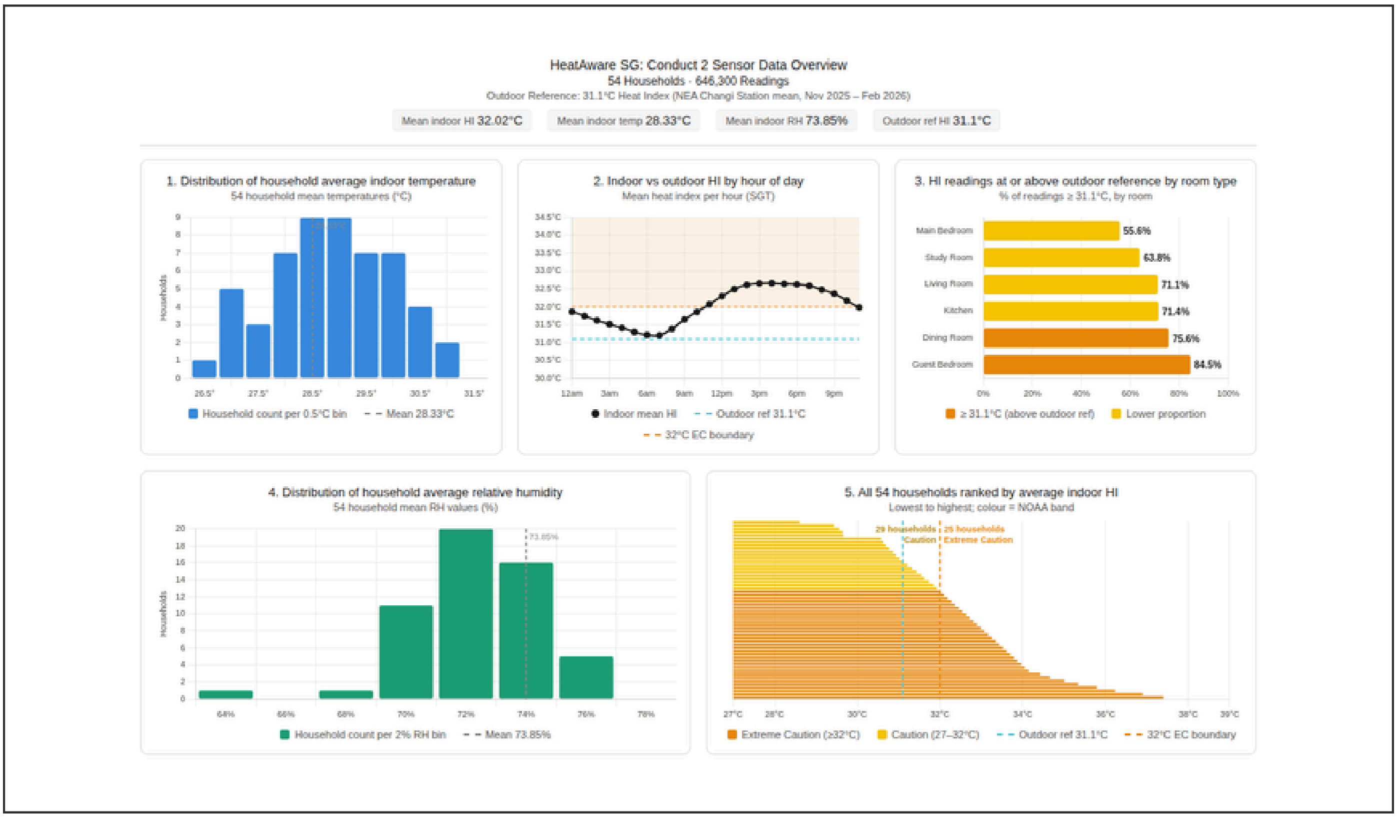

Figure 4: Conduct 2 Sensor Data Overview Dashboard
Household temperature distribution (Top Left), hourly HI with NOAA bands (Top centre), readings above outdoor HI by room type (Top right), RH distribution (Bottom left), all 54 households ranked by HI (coloured by NOAA band) (Bottom right).

Time Period	Mean Indoor HI	Outdoor HI (Est.)	Gap
Time Period	Mean Indoor HI	Outdoor HI (Est.)	Gap
Daytime (11 am – 10 pm)	32.1 – 32.7°C	~32 – 35°C	Comparable/lower
Night (10 pm – 6 am)	31.2 – 31.9°C	~24°C	+7 – 8°C

Table 3: Indoor vs. Outdoor average temperatures

Findings from Conduct 2

Data from the sensor deployment across 54 households revealed critical insights into the actual indoor heat exposure experienced by senior residents in Singapore:

- **Seniors live in conditions that feel warm or uncomfortable nearly all the time**. The overall mean indoor Heat Index of 32.02°C sits exactly at the Caution–Extreme Caution boundary, the point at which the body begins to face continuous physiological cost. 97% of all readings fall in Caution or Extreme Caution. This means thermal comfort is the exception, not the norm, and heat is a chronic, not just episodic, exposure.

- **Homes retain heat rather than cool them.** Mean indoor Heat Index (32.02°C) sits 0.9°C above outdoor reference (31.1°C). Indoor humidity (73.8%) stays persistently elevated, so indoor Heat Index stays elevated around the clock. This means residents experience continuous thermal stress with no break. The assumption that the home provides a haven from outdoor heat is false; it may be trapping vulnerable populations in dangerous conditions instead.

- **The hottest part of the day indoors lasts 12 straight hours.** Indoor Heat Index enters Extreme Caution (≥32°C) at 11 am and remains there until 10 pm for a total of 12 uninterrupted hours. Peak hourly mean (32.7°C) at 3 to 4 pm. Even at night, it never falls below 31.2°C. Prolonged daily exposure without a midday break or cooling actions will accelerate physiological strain, especially for seniors who spend most of their day at home.

- **Nighttime offers no cooling break for the body.** Overnight indoor to outdoor gap reaches +7.0°C. While outdoor conditions ease after dark, indoor Heat Index stays in upper Caution (31.2–31.9°C). Overnight, 50% of readings remain in Extreme Caution. Sleep without cooling interventions offers no meaningful thermal relief. Without nighttime recovery, cumulative heat stress may increase risks of cardiovascular strain, dehydration, and sleep disruption, posing a hidden public health crisis.

- **Humidity makes the heat feel much worse than the thermometer shows.** With a mean Relative Humidity at 73.8%, the Mean indoor Heat Index (32.02°C) runs 3.69°C above the mean air temperature (28.33°C). Monitoring air temperature alone would miss the physiological burden. Current heat advisories based on temperature alone must incorporate humidity-inclusive metrics and extend to indoor heat-health advisories to become the standard.

- **Heat exposure is not the same for everyone; some households are at much higher risk.** No household averaged below Caution. 46% of households averaged in Extreme Caution. Individual factors, not limited to household orientation, ventilation, appliances, and floor level, drive the variation. One-size-fits-all cooling advice is insufficient and unrealistic, as every household has its own unique factors. Targeted retrofits and personalised interventions are required to protect the most vulnerable households.

Limitations of the Deployment:

- **The Outdoor Heat Index reference is derived, not directly measured.** MSS publishes air temperature but not the mean Heat Index. The outdoor reference HI of 31.1°C was calculated by applying the NOAA Rothfusz regression to the deployment-period mean temperature of 27.4°C and an estimated mean RH of 84% (Northeast Monsoon seasonal average). A directly measured outdoor HI using concurrent RH data would provide a more accurate baseline for comparison.

- **Changi Station's Outdoor Heat Index reference represents a conservative lower bound.** As a coastal, airport-adjacent station, Changi typically runs 0.2 – 0.7°C cooler than inland residential areas. The outdoor reference HI of 31.1°C is therefore a conservative floor. The true indoor to outdoor Heat Index gap for households in more urbanised locations is likely wider than the 0.9°C reported here.

- **Short deployment period limits year-round pattern recognition.** The 30-day deployment (November–February) was short and coincided with above-average temperatures, including the warmest November on record. Findings may represent elevated conditions. The problem may be even more severe during Singapore's hotter months (April–May, October–November), which were not captured.

- **Sensor data does not capture behavioural context.** The dataset records ambient room Heat Index conditions, not individual exposure. Use of fans, air conditioning, window opening, or time spent in specific rooms is not captured. Personal heat exposure may differ meaningfully from the room-level Heat Index readings reported here.

- **Other compounding environmental factors.** Although humidity is measured, temperature remains the primary basis for comparison. As shown in the dataset, high humidity significantly increases perceived heat, meaning temperature alone may underestimate actual thermal stress. Air flow/wind speed was also a factor not measured during this data collection phase.

- **Outliers and activity-driven spikes influence extremes.** Three households exhibit extreme or atypical readings, including persistently high indoor temperatures and short-term spikes (e.g., during cooking or potential technical sensitivity issues). While these are valid observations, they may not represent typical household conditions and should be interpreted as specific cases rather than cohort-wide norms.

- **Pilot scale limits generalisability.** 54 households across selected HDB areas provide a strong pilot dataset, but it is not fully representative of all housing types, estate ages, or geographic locations. Households in 1- and 2-room rental flats, which may face greater heat vulnerability, were underrepresented. Findings are indicative and methodologically robust, but scaling up is required to design nationwide interventions.

HeatAware SG Recommendations

- **Expand heat risk framing to include indoor environments.** Currently, heat management in Singapore focuses on national urban planning, but Conduct 2 found indoor Heat Index averages 32.0°C, a +0.9°C above outdoor reference, and remains elevated around the clock. Public communication and policy must recognise that indoor spaces can be as hot, or even hotter, than outdoors, especially for seniors who spend most of their time at home.

- **Close the heat awareness gap.** Conduct 1 found that 56% of seniors have never heard of a heatwave, and 100% cannot define it — including 71% of those who feel "uncomfortable" or "very uncomfortable." Basic heat literacy must come before cooling interventions. Public campaigns should use simple language (e.g., "feels like" temperature) and target Community Centres, Active Ageing Centres, and senior welfare homes.

- **Advocate for personalised, context-specific cooling guidance.** Conduct 2 found wide variation across households (mean Heat Index ranging from 28.6°C to 37.4°C), driven by orientation, ventilation, appliances, and floor level. One-size-fits-all advice like "open windows" or "use fans" is insufficient. Cooling recommendations must be tailored to each home's exposure patterns, room usage, and habits.

- **Prioritise high-exposure households for targeted support.** No household was truly cool: 46% averaged in Extreme Caution, and overnight, half of all readings remained in Extreme Caution. A subset faces persistently higher risk and should be prioritised for deeper assessment, retrofits, or subsidised cooling support.

- **Promote passive cooling measures as first-line defence.** Only 35% of survey respondents use curtains or shades to block heat; most rely on reactive cooling (fans, AC, cool showers). Simple, low-cost passive measures, including solar films, external shading, and reflective curtains, should be actively promoted through community channels with demonstration kits at senior touchpoints.

- **Scale household-level monitoring as a foundation for action.** Conduct 2 proved that continuous in-home monitoring is feasible and reveals exposure patterns that national weather data cannot capture. Scaling this approach would enable precise identification of vulnerable households, targeted interventions, and evidence-based policymaking.

- **Target future deployments to high-risk periods and neighbourhoods.** The 30-day deployment missed Singapore's hotter inter-monsoon months in April–May and October–November. Future phases should prioritise warmer periods and more exposed neighbourhoods (e.g., west-facing units, less ventilated estates) to capture peak conditions.

Data availability

The data used and/or analysed for this article are available from the corresponding author upon request. The data are not publicly available due to privacy or ethical restrictions.

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Appendix 1: Heat Awareness Survey Overview

The survey was conducted on Google Forms and structured across four main sections to capture demographic background, housing characteristics, heat knowledge, and cooling behaviours.

Section 1: Respondent Profile

- Full name, age, gender
- Contact details (mobile number, full address, postal code)
- Languages spoken, race/ethnic group
- Employment status, education level
- CHAS card status

Section 2: Housing Environment

- HDB housing type, floorspace, unit orientation
- Air conditioner presence, location, and usage frequency
- Window opening habits
- Primary daytime room
- Mobility challenges and home accessibility
- Household composition and size
- Clutter levels (inside home, outside home, neighbour's unit)
- Lift access
- Additional observations about home environment

Section 3 & 4: Heat Knowledge & Cooling Behaviours

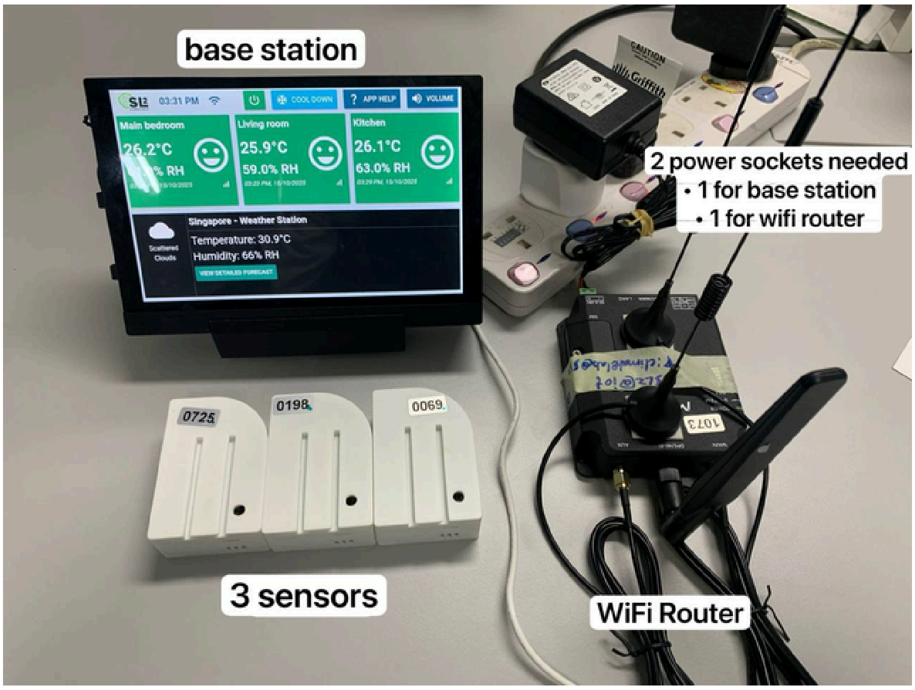
- Awareness of heatwaves (prior knowledge and definition)
- Perception of heatwave frequency in Singapore
- Level of concern about heat impacting health
- Experienced heat-related symptoms (e.g., dizziness, fatigue, difficulty sleeping)
- Self-reported home comfort level on hot days
- Current cooling methods used (e.g., air conditioning, fans, curtains, cool showers)
- Behavioural changes during periods of extreme heat
- Reasons for not altering cooling behaviours (if applicable)

Section 5: Data Protection Consent

- Acknowledgement of Personal Data Protection Act (PDPA) compliance
- Consent for data collection, use, and disclosure for the HeatAware SG initiative

Appendix 2: HeatAware SG Deployment Equipment

Household set up with a WiFi Router



Household set up without a WiFi Router

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