

IMPACT ASSESSMENT

Heat Risk Insurance

ACRONYMS

CAG	Community Action Groups
CAPI	Computer Assisted Personal Interviewing
FGD	Focus Group Discussion
ILO	International Labour Organization
IPCC	Intergovernmental Panel on Climate Change
IVRS	Interactive Voice Response System
KII	Key Informant Interviews
LPG	Liquified Petroleum Gas
MHT	Mahila Housing Trust
OBC	Other Backward Classes
SC	Scheduled Castes
ST	Scheduled Tribes
TV	Television
UHI	Urban Heat Island
UN	United Nations
UN DESA	United Nations Department of Economic and Social Affairs
WHO	World Health Organisation

Table of Contents

Executive Summary	6
Section 1: Introduction	11
1.1 Background	11
1.2 Overview of the Heat Risk Insurance Project	12
Section 2: Research Study on the "Heat Risk Insurance Project"	13
2.1 Research Objectives	13
2.2 Methodology	13
2.3 Study Processes	14
Section 3: Socio-Demographic Profile of Respondents	15
3.1 Demographics	15
3.2 Seasonal Challenges and Their Impact on Livelihoods and Daily Life	18
Section 4: Research Findings	20
4.1 Knowledge/Awareness Level	20
4.2 Ease of availing Insurance Scheme	24
4.3 Payout Amount Received	24
4.4 Adequacy of Payout amount	25
4.5 Socio-economic Impact of the Payout	26
4.6 Coping Strategies and Intended Use of Payout (For Those Who Did Not Receive the Payout)	27
4.7 Satisfaction with the Product	28
4.8 Family Perceptions of the Insurance Scheme	29
4.9 Willingness to Avail Insurance Scheme	29
4.10 Preferred Source of Insurance Scheme Information	31
4.11 Product Recommendation	31
4.12 Preference for Monsoon Risk Insurance	32
Section 5: Operational Challenges	33
Section 6: Learnings & Recommendations	34

List of Tables

Table 1: % Distribution of respondents by occupation of the breadwinner	16
Table 2: % Distribution of respondents by their annual income	17
Table 3: % Distribution of respondents by their awareness levels of climate change	20
Table 4: % Distribution of respondents by their awareness of heat wave	21
Table 5: % Distribution of respondents by awareness of heat risk insurance	22
Table 6: % Distribution of respondents by their awareness of the insurance premium	23
Table 7: % Distribution of respondents by their awareness of the payout parameters	23

List of Figures

Fig 1: % Distribution of respondents by educational status	15
Fig 2: % Distribution of respondents by social category	16
Fig 3: % Distribution of respondents by their housing status	18
Fig 4: % Distribution of respondents by amount received as payout	26
Fig 5: % Distribution of respondents by sufficiency of payout	26
Fig 6: % Distribution of respondents by utilisation of payout	26
Fig 7: % Distribution of respondents by decision-making authority on payout utilisation	27
Fig 8: % Distribution of respondents by intended utilization of payout if received	27
Fig 9: % Distribution of respondents by their satisfaction levels with the product	28
Fig 10: % Distribution of respondents by their willingness to pay	30
Fig 11: % Distribution of respondents by preferred source of insurance scheme information	31
Fig 12: % Distribution of respondents by willingness to recommend the scheme	31
Fig 13: % Distribution of respondents by their perceived usefulness of the insurance scheme during monsoon	32

Executive Summary

A. Background and Context

Climate change has significantly intensified heat stress across urban poor communities in India, where rising temperatures and frequent heatwaves disproportionately affect those living in informal settlements. These communities face compounded vulnerabilities due to substandard housing, precarious livelihoods, and inadequate access to cooling infrastructure, healthcare, and social security. Informal workers, particularly women engaged in occupations like street vending, domestic work, and construction, are at heightened risk due to prolonged outdoor exposure and poor working conditions. This exacerbates health issues such as dehydration, heat exhaustion, and cardiovascular diseases, while also reducing productivity and income. The urban heat island effect further worsens conditions in densely populated informal settlements, which experience temperatures 3–5°C higher than planned residential areas. Existing heat action plans in India inadequately address the specific needs of informal workers and gender-based vulnerabilities.

B. The ‘Heat Risk Insurance’ Project

To mitigate the adverse effects of extreme heat on vulnerable urban women, Mahila Housing Trust (MHT), in collaboration with Global Parametric and the Howden Group, launched an innovative heat risk insurance product. The pilot project covered 26,000 women members of MHT-promoted credit cooperatives across Ahmedabad, Vadodara, and Surat. The insurance provided financial relief through payouts when maximum temperatures exceeded critical thresholds for two consecutive days. During the pilot phase, MHT subsidized the premium costs. In Ahmedabad, payouts amounting to ₹15,00,000 were disbursed to 2,000 women members when temperature thresholds were breached, showcasing the scheme’s potential to offer economic resilience against heat stress.

C. Research Objectives and Scope

The study evaluated the effectiveness of the heat risk insurance scheme by focusing on women informal workers in Ahmedabad, Baroda, and Surat. The specific objectives were to:

- Assess the economic impact of payouts on beneficiaries, including construction workers, vendors, and home-based workers.
- Analyze the utilization of payouts for various needs, such as social, care, gender-specific, and health-related expenses.
- Measure beneficiary satisfaction with the insurance coverage and benefits.
- Examine women’s knowledge of heat as a climate risk, and insurance as a risk transfer mechanism.
- Identify social and logistical challenges faced in providing required documentation.
- Investigate the extent of women's decision-making power in utilizing payout funds.

D. Methodology

A mixed-methods approach was employed, involving both quantitative and qualitative data collection:

- **Quantitative Data Collection:** A structured questionnaire was administered to 410 informal women workers across the three cities, exceeding the targeted sample size of 400. Of these, 50 respondents were from a subgroup that received intensive awareness-building activities.
- **Qualitative Data Collection:** 18 Focus Group Discussions (FGDs) were conducted across the cities, with separate sessions for those exposed to intensive and non-intensive awareness campaigns. In-depth interviews were also conducted with key informants, including field staff and managers involved in the insurance rollout.

E. Demographics

The majority of surveyed women (66%) were aged between 25-45 years, with 33% in each of the 25-35 and 36-45 age groups. About 30% were above 46 years, and only 4% were aged 18-24.

Regarding education, nearly 20% were illiterate, with the highest rate in Surat (23%). Around 31% had secondary education, 14% below primary, 15% completed primary school, and 12% finished middle school. Only 6% reached the 10th grade, and 7% were higher secondary graduates.

Social category data showed 44% in the general category, predominantly in Surat (77%) and Baroda (57%), followed by 27% OBCs (Other Backward Classes), 17% SCs (Scheduled Castes), and 12% STs (Scheduled Tribes). Women mainly engaged in home-based work, such as tailoring, embroidery, and domestic help, while men worked as laborers, security guards, and street vendors. About 26% of breadwinners were daily wage laborers, followed by 24% in factories. Income levels varied, with 35% earning Rs. 1,00,001-1,50,000 annually, while 19% earned below Rs. 75,000. Most respondents (86%) were married, with 47% having two children.

Homeownership was high (88%), and most lived in pucca houses (71%), predominantly using LPG for cooking.

F. Seasonal Challenges and Their Impact on Livelihoods and Daily Life

During summer, most respondents living in overcrowded, poorly ventilated tin-roofed houses struggle with extreme heat, affecting productivity and increasing electricity costs. Women reported reduced efficiency due to heat, while farmers and cattle rearers in Baroda faced health issues and income loss from decreased milk production. Tailors and artisans in Surat and Ahmedabad experienced work disruptions due to power cuts and heat, while other labourers suffered from blisters and wage losses. Hence, excessive heat reduced earnings by half, and women also mentioned that fasting during Roza became particularly challenging. During monsoons, flooding hampers commuting, damages kutcha homes, and contaminates water, leading to diseases. Work disruptions are common, particularly for tailors in Ahmedabad and Surat and vegetable packers in Baroda, leading to significant income loss. Wage earners, including rickshaw pullers and house helps, also face reduced earnings due to waterlogged streets and damaged vehicles, worsening financial hardships.

G. Key Findings

- **Climate Change Awareness:** 86% of respondents were aware of climate change, with Surat showing the highest awareness (100%) and Baroda the lowest (51%). Most participants correctly identified climate change as a result of human and natural activities leading to extreme weather events. However, a small proportion (13%) attributed it to natural causes or divine intervention. FGDs revealed that participants in Baroda, particularly women working in agriculture, highlighted

how climate change impacts crop yields due to erratic weather patterns, including higher summer temperatures and unseasonal rains.

- **Heat Wave Awareness:** 87% of respondents were familiar with the term “heat wave,” with Surat showing the highest awareness (100%) and Baroda the lowest (58%). Only 28% of respondents correctly identified a heat wave as unusually hot weather lasting several days. Many others misunderstood it as a general rise in national temperatures. FGDs shared that heat waves contribute to health issues like fainting and heat strokes, with prolonged exposure weakening the body.
- **Heat Risk Insurance:** Overall, 92% of respondents were aware of heat risk insurance, with Surat (100%) being fully informed while in Ahmedabad and Baroda 94% and 80% respectively were aware. However, many respondents misunderstood the insurance definition, with only 78% correctly identifying it as coverage for heat damage. Others thought it covered heat-related illnesses or deaths from heat strokes. Most participants learned about heat risk insurance through MHT staff, although Baroda had lower awareness among non-intensive training participants.
- **Premium Awareness:** 91% of respondents were aware that MHT covered the premium for heat risk insurance. Awareness was highest in Ahmedabad (99%) and lowest in Baroda (70%). While a majority knew the premium was covered, only a small proportion could correctly specify the premium range. In Baroda, knowledge of the premium amount was particularly limited.
- **Payout Awareness:** 65% of respondents were aware of the criteria for payouts. Awareness was highest in Ahmedabad (94%) and lowest in Surat (42%) and Baroda (38%). Most respondents correctly understood that payouts occur when the temperature exceeds a certain threshold for two consecutive days. However, qualitative discussions revealed that many participants were unclear about specific payout criteria, such as temperature thresholds and coverage duration.
- **Ease of Availing Insurance Scheme:** A significant 93% of respondents found the insurance process easy, with the highest satisfaction reported in Ahmedabad and Surat. The majority had the required documents, including Aadhaar and bank passbooks.
- **Payout Amount Received:** In Ahmedabad, 96% of respondents received payouts, but none in Surat or Baroda due to unmet temperature criteria. Many respondents in these cities understood that their cities did not meet the necessary heat thresholds for payouts. Most in Ahmedabad correctly identified their payout amount, though some did not track the exact amount, suggesting low engagement with financial details.
- **Adequacy of Payout:** While 85% of respondents in Ahmedabad felt the payout was sufficient, many suggested an increase to Rs. 1,000 or more for lower temperature. Over half of the respondents were highly satisfied with the timely and accessible payout process.
- **Socio-economic Impact of the Payout:** Respondents primarily used the payout for savings (41%) or daily expenses (33%). Most felt empowered in decision-making regarding the payout, and 97% felt it increased their financial autonomy.
- **Coping Strategies for Those Who Didn’t Receive Payout:** Those who did not receive the payout relied on savings, extra work, or reduced expenditures. If they had received the payout, many would have used it for daily expenses or savings.
- **Satisfaction and Family Perceptions:** Overall, 89% of respondents would recommend the insurance scheme, with 88% of families viewing it positively. While some were unsatisfied with the payout amount, it provided financial relief, especially in covering essential household expenses.

- **Willingness to Avail Insurance Scheme:** The majority (86%) expressed willingness to enrol in the scheme, even if required to pay the premium themselves. Surprisingly, respondents from Surat and Baroda who didn't receive the payout because the temperature did not exceed the required threshold also expressed willingness to pay the premium. Most preferred paying Rs. 250-500, and many requested the heat threshold be lowered to benefit more people.
- **Preferred Source of Information:** 99% of respondents preferred receiving insurance information through MHT/Cooperative, highlighting the trust in these channels.
- **Monsoon Risk Insurance:** A majority of respondents (88%) found the idea of a monsoon risk insurance scheme useful, particularly for addressing the specific challenges faced during the rainy season. Participants in focus group discussions highlighted several difficulties, including flooded streets, mobility restrictions, damage to homes, and disrupted work for both men and women in various occupations such as rickshaw driving, home-based work, lacework, diamond work, and farming. Many emphasized the financial struggles they face during this time, with some urging for insurance payouts to support them during the monsoon.

H. Operational Challenges

On the operational side, the insurance scheme faced multiple challenges. Many women had limited understanding of insurance, which made it difficult for the cooperative to explain the heat risk insurance scheme. The tight implementation timeline and inadequate awareness sessions further contributed to confusion. Additionally, collecting necessary beneficiary details, such as bank account information and Aadhaar cards, was a major challenge largely due to beneficiaries' reluctance to share sensitive information. The complex financial process of crediting and debiting premiums for 26,000 beneficiaries was also time-consuming and required careful coordination by the credit managers and implementation team. Furthermore, mismatches between ERA5 temperature data and local weather reports led to confusion over payout eligibility, as many beneficiaries did not understand the specific conditions for triggering payouts.

I. Lessons Learned and Recommendations

A key lesson from the research is the critical importance of awareness and education. While a significant proportion of women were aware of the concept of heat risk insurance, a notable gap in understanding the specifics of premiums, payout criteria, and thresholds was observed. This suggests that more targeted and consistent outreach and education efforts are necessary, particularly regarding the details of the insurance coverage and the specific temperature thresholds that trigger payouts.

Despite these initial gaps, the research also highlights a positive shift in women's knowledge and they are now aware that such insurance options exist in the market. This increased awareness is a crucial step toward enhancing financial resilience and preparedness for climate risks.

Additionally, the study highlighted the urgent need for more accessible financial solutions tailored to the realities of low-income women. Despite the positive feedback on the payouts, many women felt the amount provided was insufficient to fully address their financial losses. Future iterations of the insurance product could benefit from higher payout amounts, especially considering the dual financial burden women face during extreme weather events, with both income loss and rising costs for heat-related relief.

The research also highlights the potential for expanding the scope of climate risk insurance beyond heatwaves to include coverage for other climate-induced challenges, such as income reduction due to flooded streets during the monsoon. A strong majority of participants expressed interest in a monsoon

risk insurance scheme, highlighting the need for comprehensive climate protection products that can address the full spectrum of weather-related challenges faced by vulnerable populations. This would provide financial support to cope with the adverse economic impact of the monsoon season.

Finally, it was learnt based on qualitative feedback from participants that, in Baroda, the current heat risk insurance threshold of 43.7°C is rarely met, and it's recommended to lower it to 40-42°C to make it more accessible and beneficial for residents. In Surat, many women beneficiaries mistakenly believe the threshold is the same as Ahmedabad's, so targeted awareness campaigns are needed to clarify the eligibility criteria.

Section 1: Introduction

1.1 Background

Climate Change and Heat Stress in Urban Poor Communities in India

Climate change has intensified heat stress across India, disproportionately affecting urban poor communities. Rising global temperatures, erratic weather patterns, and the increasing frequency of heatwaves have heightened the vulnerability of those living in informal settlements. With limited access to cooling infrastructure, clean water, and adequate housing, these communities bear the brunt of extreme heat events (IPCC, 2021).

The urban poor face multiple layers of vulnerability due to precarious livelihoods, substandard housing, inadequate climate adaptation mechanisms, and limited access to healthcare. As the global urban population is projected to rise from 4.4 billion in 2020 to 6.3 billion in 2050— with nearly 82% of this growth occurring in less developed regions—climate change-induced health risks are expected to become even more severe (United Nations, 2019). Asia and Sub-Saharan Africa alone are anticipated to contribute 70% of the total urban population by 2050 (UN DESA, 2018). This urban expansion, coupled with increasing climate variability, will further entrench health inequities in developing countries.

Heat stress not only poses significant health hazards, but also impacts overall labour productivity, reducing total working hours and earnings, particularly for informal sector workers. According to the International Labour Organization (ILO, 2018), heat stress could lead to the loss of 5.8% of total working hours in India by 2030, equivalent to approximately 34 million full-time jobs. This is expected to result in a GDP loss of over 5% (ILO, 2019). Informal workers, especially those engaged in physically demanding jobs such as construction, agriculture, and street vending, will be the most affected, with construction workers alone accounting for 9.04% of total working hours lost to heat stress (ILO, 2019).

The lack of social security and occupational health protections exacerbates the vulnerability of informal workers. Heat stress is recognized as an occupational health hazard that increases workplace injuries and negatively impacts productivity. Without targeted policy interventions, the worsening impact of climate change on urban poor communities will hinder progress toward decent work, social justice, and the achievement of the Sustainable Development Goals (ILO, 2019).

Impact on Informal Women Workers

Women working in the informal sector—such as street vendors, home-based workers, construction labourers, and waste pickers—face heightened risks from extreme heat. These workers often endure prolonged outdoor exposure or poorly ventilated indoor environments, leading to severe health and productivity consequences.

1. **Health Consequences:** Heat stress can cause dehydration, heat exhaustion, and heat stroke, with long-term risks including cardiovascular and renal diseases (Imran et al., 2019). Pregnant women are particularly vulnerable, facing increased risks of maternal and foetal complications (WHO, 2021).
2. **Economic and Livelihood Challenges:** Informal women workers frequently operate without social protection or labour rights. High temperatures reduce their working hours and productivity,

directly impacting daily earnings. Additionally, the inability to work in extreme heat forces many to choose between economic survival and health risks (Sharma & Bhattacharya, 2023).

3. **Gendered Burden of Heat Stress:** Women in urban poor communities also bear the burden of unpaid domestic labour. Cooking in poorly ventilated spaces, fetching water, and managing household chores under extreme heat conditions exacerbate their physical stress. Lack of access to cooling solutions further worsens their situation (Rao et al., 2022).

The Urban Heat Island (UHI) effect amplifies heat stress in cities, where dense construction and limited green cover trap heat. Informal settlements, often characterized by inadequate housing, poor ventilation, and lack of access to cooling facilities, become heat hotspots. Studies indicate that urban slums experience temperatures 3–5°C higher than planned residential areas (Basu & Samant, 2020).

While India has developed heat action plans in various cities, these often overlook the specific needs of informal workers and gendered vulnerabilities. Cooling centers, access to drinking water, and protective labour policies remain inadequate (Ahmed et al., 2021).

1.2 Overview of the Heat Risk Insurance Project

Mahila Housing Trust (MHT) has been at the forefront of addressing climate-induced challenges by raising awareness and providing solutions to help informal communities mitigate heat stress.

Extreme heat waves significantly impact women's livelihoods, leading to income losses due to heat-related health issues and reduced working capacity. Additionally, households face increased expenses on cooling measures, such as electricity, cold beverages, prickly heat powders, and other heat-related medical costs.

To address this dual burden, MHT, in collaboration with Global Parametric and the Howden Group, introduced a pioneering heat risk insurance product. The insurance provided payouts when temperatures exceeded critical thresholds for two consecutive days: **43.7°C (lower) and 44.1°C (higher) in Ahmedabad, 43.6°C (lower) and 44.18°C (higher) in Vadodara, and 37.8°C (lower) and 38.08°C (higher) in Surat.**

Under this scheme, women were required to pay an annual premium of **Rs. 354**. However, during the pilot phase, MHT covered the premium costs on behalf of the insured women. When Ahmedabad experienced temperatures surpassing the threshold, a total payout of **Rs. 15,00,000** was disbursed to **2,000 women members**, demonstrating the effectiveness of the initiative in providing financial relief against heat stress.

To raise awareness among participants about the insurance products, MHT employed both intensive and non-intensive training approaches.

In the **Intensive Training** approach, participants were engaged using interactive methods such as video presentations on global warming and climate change. Games were utilized to demonstrate the practical importance of heat insurance in an engaging way, and comparisons to medical insurance helped underline the need for protection against heat-related risks. Additionally, field staff conducted door-to-door visits to directly inform women about the scheme.

For the **Non-Intensive Training** approach, beneficiaries received informational pamphlets outlining the details of the heat insurance scheme, helping them understand its benefits and coverage. Furthermore, messages about the scheme were shared with participants via IVRS to ensure wider reach.

Section 2: Research Study on the "Heat Risk Insurance Project"

2.1 Research Objectives

The study focused on women informal workers across three cities, Ahmedabad, Baroda, and Surat to evaluate the effectiveness of the heat risk insurance scheme and gather their feedback. The study specifically aimed to:

- Understand the economic impact of the payout on insurance beneficiaries specifically, construction workers, vendors, home-based workers, and others.
- Examine how the payout was used i.e. to cover social/care needs/gender needs/health needs, etc.
- Gauge beneficiary satisfaction regarding the coverage and benefits provided by the insurance policy.
- To understand the current levels of knowledge of women on heat as a climate risk and insurance as a risk transfer mechanism vis-a-vis a benefit mechanism.
- Investigate any social or logistical challenges faced by women in providing bank details and other documentation required by the insurance company.
- Explore the extent of women's decision-making power in utilizing the payout funds.

2.2 Methodology

The research adopted a mixed-methods approach, incorporating both quantitative and qualitative data collection and analysis.

Quantitative data collection:

Quantitative data was gathered through individual surveys administered to informal workers using a structured questionnaire. A total of **410 informal workers** were surveyed across the three locations, exceeding the targeted sample size of 400. Specifically:

- Ahmedabad: 196 respondents (target: 200)
- Baroda: 109 respondents (target: 100)
- Surat: 105 respondents (target: 100)

Of the total surveys, 50 surveys were specifically targeted on the informal women who participated in intensive awareness-building activities.

Qualitative Data Collection:

The qualitative component of the study included the following:

- **Focus Group Discussions:** A total of 18 FGDs were conducted with 6 FGDs done with women in each city. 3 FGDs per city were done with the members who received intensive awareness building and 3 with those that received non-intensive awareness building.
- **Key Informant Interviews:** Key informant interviews (KIIS) were conducted with the field staff/managers of the credit cooperatives who were involved in the rollout of the insurance scheme.

The respondents for the surveys and FGDs were randomly selected from the total universe of 26,000 with whom the product was piloted across the cities of Surat, Ahmedabad, and Baroda.

2.3 Study Processes

- A. Rollout meeting and desk study:** The study began with a kick-off call with MHT and the team in-charge of the project in order to better understand the context and implementation of the program. Additionally, reports such as the insurance policy, terms and conditions, etc. was studied in order to better understand the program implementation.
- B. Development and finalisation of study tools:** The study team prepared the first draft of structured questionnaires and the qualitative tools, such as FGDs to capture qualitative insights. The tools were shared with the MHT team and their feedback was incorporated. The tools were then translated into Gujarati.
- C. Development of data collection software, testing and finalization:** The finalized bilingual questionnaire was provided to the CAPI (Computer-Assisted Personal Interviewing) developer to create the data collection software for use on tablets and mobile devices. Field testing of the CAPI questionnaire was conducted during the enumerator training sessions. Based on feedback, the questionnaires were further refined, and the application was finalized for survey deployment.
- D. Field work procedure – training, data collection and quality assurance:** A one-day training session was held at the MHT office in Ahmedabad on January 21st to orient the field teams about the study's objectives and familiarize them with the project, survey objectives, data collection protocols, ethical considerations, and an in-depth review of all survey questions. Local enumerators were recruited and were provided comprehensive training for conducting the quantitative survey. The training began with theoretical discussions, followed by mock calls, and a debriefing session to address challenges and ensure readiness. A total of seven enumerators, a supervisor and the moderator for conducting the qualitative interviews participated in the orientation session. Of the seven enumerators, three conducted data collection in Ahmedabad, while the remaining four were split between Surat and Ahmedabad, with two assigned to each location.

The data collection process employed CAPI on tablets or mobile devices for structured surveys. Qualitative interviews were audio-recorded to facilitate accurate transcription and analysis. Each team completed data collection in 8-10 days, including training days, off days, and local holidays, to minimize disruptions to field operations while maintaining high data quality. Prior to collecting any qualitative or quantitative data, including audio recordings, informed consent was obtained from all respondents. Coordination between investigators and the supervisor occurred on a daily basis to conduct quality checks and provide continuous guidance to enumerators. Data quality compliance was ensured through Range Checks, Consistency Checks, and Validation Checks integrated into the CAPI software.

Section 3: Socio-Demographic Profile of Respondents

3.1 Demographics

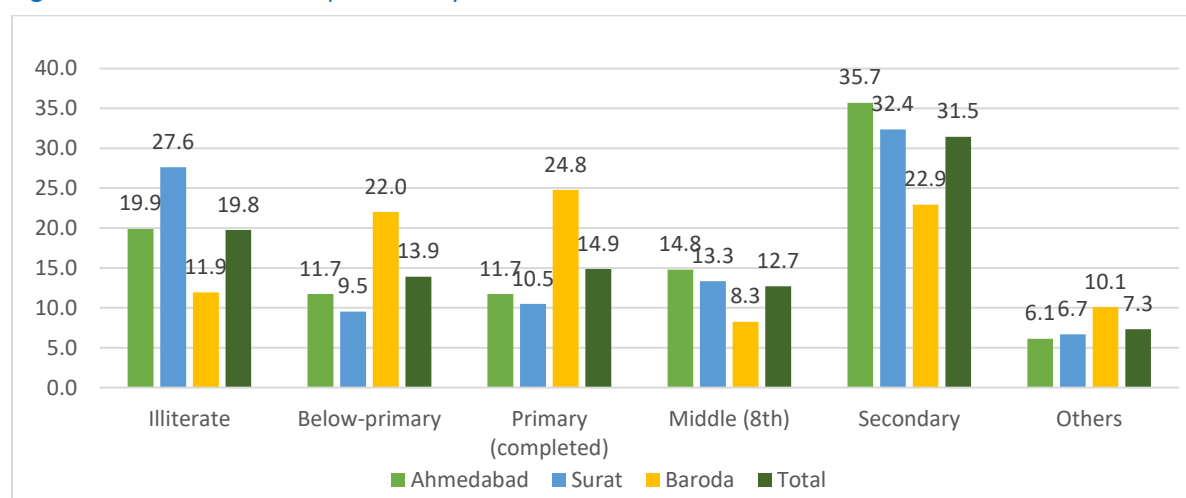
Age-group

The majority of the surveyed women (66%) were primarily in the age groups of 25-35 years and 36-45 years, comprising 33% each. Nearly 30% were above 46 years while 4% were in the 18-24 years age group.

Educational Status

At the aggregate level, nearly 20% of respondents were illiterate, with the highest proportion in Surat (23%). About 31% had studied up to secondary school, with Ahmedabad having the highest percentage (36%). Additionally, 14% had education below primary, 15% had completed primary schooling, and 12% had finished middle school. Around 6% of respondents had studied up to the 10th grade while 7% had completed higher secondary or were graduates.

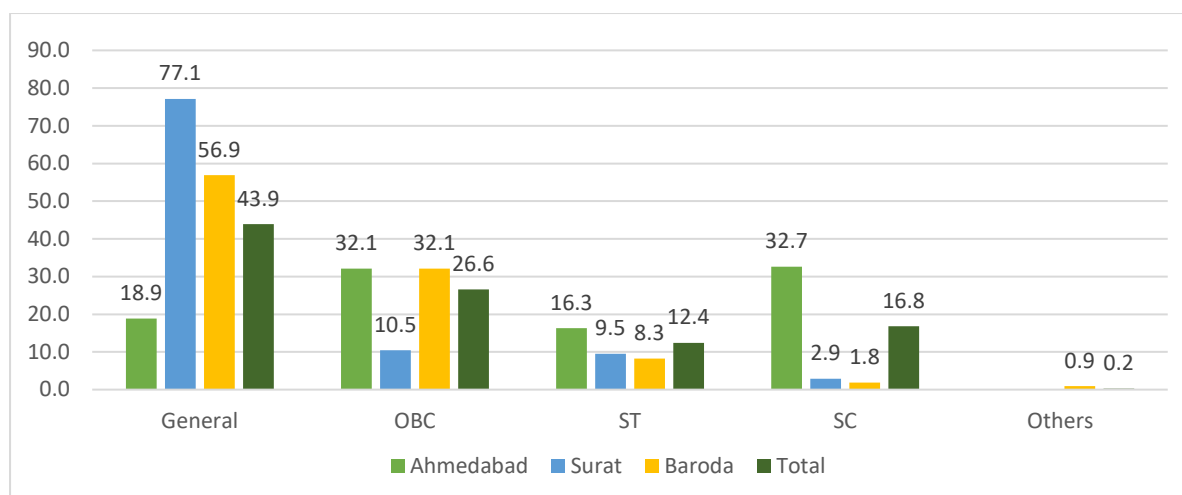
Fig 1: % Distribution of respondents by educational status



Social Category

The data revealed that maximum respondents (44%) belonged to the general category, highest proportion in Surat (77%) followed by Baroda (57%). This was followed by OBCs at 27% and SCs at 17%. Scheduled Tribes constituted 12% of the sample.

Fig 2: % Distribution of respondents by social category



Occupation of the Respondents

Qualitative interactions revealed that most women in Ahmedabad, Surat, and Baroda were engaged in home-based work, with some also serving as homemakers. Their activities included tailoring, embroidery, glasswork, stitching lace on dupattas, trimming threads from stitched bags and sarees, packaging plastic spoons and chocolates, making garlands and malas, and domestic help. In Baroda, a few women were additionally involved in cattle rearing, farming, and earning a livelihood by cutting vegetables for local shops.

Most men were employed as watchmen, welders, sweepers, rickshaw pullers, labourers in private companies or factories, and street vendors, among other occupations.

Occupation of Bread Winner

The survey revealed that 26% of the bread winners were daily wage labourers followed by 24% who were working in factories or industries. Another 11% and 6% were home-based workers and domestic workers respectively. Construction workers constituted 4% of the sample. Apart from these occupations, some of the bread winners were also employed in the government and private sector, working as security guards, delivery boys, drivers, electricians, as well as working in cloth shops, papad-making, rickshaw pullers and farmers. Qualitative discussions revealed that the bread winners were also welders, sweepers, cobblers and street vendors, among other occupations.

Table 1: % Distribution of respondents by occupation of the breadwinner

Occupation of bread winner	Home based worker	Industry/factory worker	Street vendor	Domestic worker	Daily wage labour	Construction worker	others
Ahmedabad	18.4	28.1	1.0	2.0	32.1	4.6	13.8
Surat	6.7	14.3	4.8	15.2	26.7	1.0	31.4
Baroda	3.7	26.6	1.8	3.7	15.6	4.6	44.0
Total	11.5	24.2	2.2	5.9	26.3	3.7	26.3

Annual Income

The table below shows that 35% of respondents had an annual income between Rs. 1,00,001 and 1,50,000, while 29% earned between Rs. 75,001 and 1,00,000. Around 19% reported an income of less than Rs. 75,000 per annum, and 9% fell within the Rs. 1,50,001–2,00,000 range. Less than 5% had an annual income exceeding Rs. 2,50,000, while only 3% reported earnings between Rs. 2,00,001 and 2,50,000. Notably, none of the respondents from Ahmedabad reported an income above Rs. 2,50,000.

Table 2: %Distribution of respondents by their annual income

Annual Income	Below Rs. 75,000/-	Rs. 75,001- 1,00,000/-	Rs. 1,00,001- 1,50,000/-	Rs. 1,50,001- 2,00,000/-	Rs. 2,00,001 – 2,50,000/-	Above 2,50,000/-
Ahmedabad	26.0	24.5	39.8	7.7	2.0	
Surat	1.9	26.7	53.3	16.2	1.9	
Baroda	22.9	38.5	9.2	5.5	5.5	18.4
Total	19.0	28.8	35.1	9.3	2.9	4.9

Marital Status & Family Composition

Regarding the marital status of the respondents, 86% were married, 9% were widowed, and 5% were unmarried. In terms of children, the highest percentage of respondents (47%) had two children, while 22% had three.

Presence of Disabled Persons in the Household

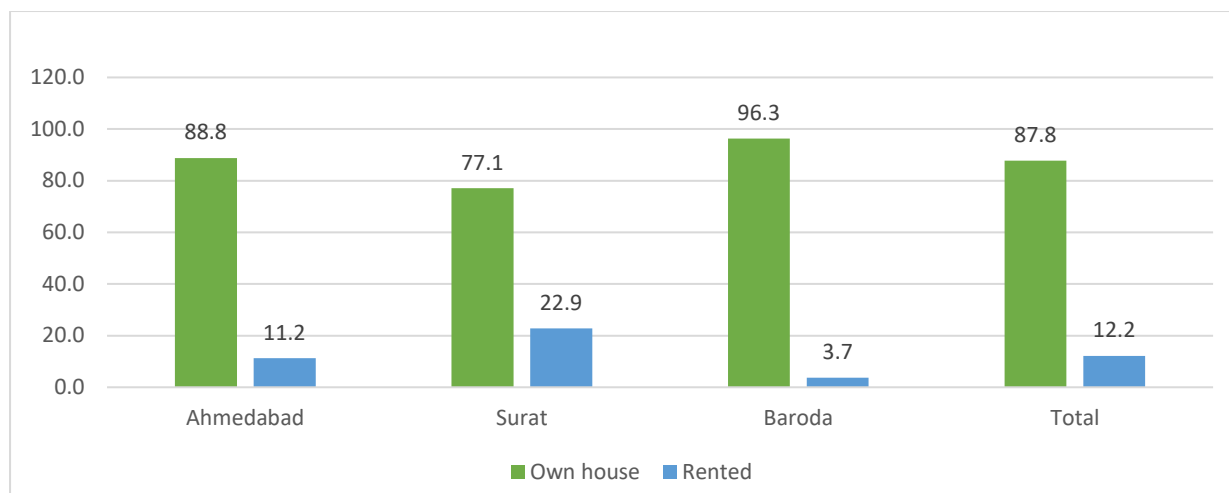
Only 5% (19 nos) of respondents reported having a disabled person in their household. Among them, 15 respondents mentioned that their family members had physical disability, while 2 stated that their family member had a mental disability. Another 2 respondents stated that they had family members had speech impairment.

Residential Status & Housing Conditions

All surveyed respondents were permanent residents of the city. A significant majority (93%) lived with their spouse or family, while about 6% resided with friends or colleagues. Less than 1% lived alone. Focus Group Discussions (FGDs) corroborated these findings, highlighting the prevalence of family-based living arrangements.

Home ownership was notably high, with nearly 88% of respondents owning their homes, and the remaining 12% renting. This trend was consistent across FGDs, where most participants also reported living in self-owned houses. Many respondents shared that they had migrated from Uttar Pradesh, Maharashtra, Madhya Pradesh, and Bihar in search of employment opportunities several years ago. A few indicated that their families had migrated over 50 years ago.

Fig 3: % Distribution of respondents by their housing status



Housing Type

The majority of respondents (71%) lived in pucca houses, while 25% resided in semi-pucca houses. Approximately 4% of respondents lived in kuccha houses, with the highest proportion from Surat (11%).

Household Fuel Usage

The majority of respondents (99%) used LPG as their cooking fuel, with 100% of respondents from Ahmedabad and Surat reporting its use. Approximately 12% of respondents used firewood or a chulha, with the highest proportion from Baroda (43%). Moreover, 7% of respondents from Baroda mentioned using biomass.

3.2 Seasonal Challenges and Their Impact on Livelihoods and Daily Life

Summer Hardships

The majority of respondents lived in tin-roofed houses with poor ventilation, making summers unbearably hot and challenging for both household chores and income-generating activities. Most homes consist of just one room and a kitchen, accommodating 5-7 members, leading to overcrowding and suffocation.

Women participants generally reported a decline in productivity due to the heat, along with a significant rise in electricity bills as they rely on fans and coolers throughout the day.

Participants from Baroda engaged in farming and cattle rearing shared that working in the fields during summer is extremely difficult, often leading to fainting, headaches, skin allergies and fluctuations in blood pressure. Moreover, the unavailability of fodder for cows and buffaloes affected both the quantity and quality of milk, significantly reducing their income. A woman FGD participant from Baroda, who irons clothes for a living, shared, ***“During extreme summers, ironing becomes very difficult as the high temperatures, combined with the heat from the iron, make it unbearable. I get blisters on my palms and sometimes have to take afternoon breaks, which affects my income”.***

Participants from Ahmedabad engaged in tailoring, embroidery, and zardozi stone work on sarees and dupattas shared that frequent power cuts during summer force them to stop working due to the extreme heat. Women stated that their responsibilities increase during summer as children fall ill more often, leading to higher medical expenses. A participant, whose husband sticks posters on poles, mentioned that his hands get blisters from the hot iron poles. He is forced to take 2-3 hours break in the afternoon, which impacts his wages.

FGD participants from Surat pointed out that during periods of excessive heat, working near sewing machines causes excessive sweating and suffocation, which affects efficiency. As a result, earnings during summer days are reduced to half of the usual amount. A participant shared, ***“Observing Roza during summer is extremely difficult, especially during power cuts. During this time, we feel weak and are unable to work”.***

Monsoon Struggles

Most participants across the locations highlighted several challenges during the monsoon. The streets get flooded, making it difficult for people to commute to work or for children to attend school. In most of the houses water leaks through the roofs during the monsoon. Additionally, heavy rains cause damage to houses, and repairing them can be costly. It was also observed that during the monsoon months, the water becomes contaminated, leading to the spread of several water-borne diseases.

In Ahmedabad, women involved in tailoring work reported that they often face a work shortage 2-3 months after Diwali. In Baroda, women engaged in cutting and packing green leafy vegetables and peas mentioned that flooded streets prevent them from accessing vegetables, disrupting their work and resulting in a monthly loss of approximately Rs. 1000 – Rs. 1500.

Shopping for groceries and vegetables becomes challenging as people have to wade through knee-deep or waist-deep water. The stagnant water also breeds mosquitoes, leading to malaria and other illnesses. Some participants shared that their husbands’ workplaces, especially private companies, often shut down or reduce shifts during the monsoon, leading to wage loss. Similarly, rickshaw pullers and auto drivers experience a loss of income during the monsoon due to fewer customers. Additionally, the water often damages their rickshaws by entering the machine, and repairing them can be costly. A participant working as a domestic worker mentioned, ***“During the monsoon, I can't go to work for several days in a row because the streets are flooded. I earn very little, and even that gets reduced when I am unable to work.”***

Section 4: Research Findings

4.1 Knowledge/Awareness Level

Awareness and Understanding about Climate Change

At the aggregate level, 86% of respondents reported being aware of the term “climate change,” while 11% indicated they were not, and 3% were unsure. Awareness was highest in **Surat (100%)**, followed by **Ahmedabad (97%)**, and lowest in **Baroda (51%)**.

Among those aware of climate change, **83%** correctly identified it as a change in climate due to human activity and natural factors, resulting in extreme weather events such as harsh winters, unseasonal rains, and high summer temperatures. However, **13%** mistakenly attributed climate change to natural causes or divine influence, and **2%** were unable to provide further explanations.

Table 3: % Distribution of respondents by their awareness levels of climate change

Location	% of respondents aware of term 'climate change'	Understanding the climate change			
		Change in weather because of nature or God's doing	Change in the climate because of human activity and nature, leading to harsh winters, unseasonal rain, and high temperatures in summer	The tracking of daily temperature	I have heard the term climate change but find it difficult to describe in my own words
Ahmedabad	96.94	18.95	77.89	0.00	3.16
Surat	100.0	1.90	98.10	0.00	0.00
Baroda	51.38	19.64	75.00	1.79	3.57
Total	85.61	13.66	83.48	0.28	2.28

A large majority of FGD participants were aware of climate change, identifying it as extreme summer heat, unseasonal rains, unusually cold winters, or a lack of winter cold.

Women participants who worked in farms in **Baroda** shared that climate change has negatively impacted their agricultural work. They highlighted that higher summer temperatures are causing crop failures due to insufficient water for irrigation. Moreover, during the monsoon, continuous rains result in waterlogging, which damages the roots of plants. According to a participant, ***“We face huge losses due to the unpredictability of the weather. In recent years, there has been an increase in pests and insect attacks, which has significantly affected our crop yields”.***

Participants who received the intensive training from Bhakti Nagar, **Surat**, pointed out that previously, the atmosphere was more predictable according to the seasons, but in the present times, it has become uncertain.

“Previously, people used bicycles for commuting, but now the number of motorcycles and four-wheelers has increased a lot. This rise in vehicle usage leads to pollution and change in the environment”, a FGD Participant in Surat stated.

The majority of participants across locations (97%) reported hearing about climate change from MHT staff. Another 11% mentioned learning about it through the news, 6% from family and friends, and 3% from social media.

During the focus groups, participants across the locations mentioned that their awareness about climate change was mostly through MHT staff. Some of them said that they had heard about this through TV and mobiles. A few FGD participants from Surat mentioned that they had heard about climate change from their children. Participants from Ahmedabad attributed climate change to pollution, factory emissions, deforestation, and use of air conditioners. Most of them were aware of climate change and their impacts.

Heat Wave Awareness

Around 87% of respondents had heard of a heat wave, while 10% had not, and 3% were unsure. Awareness was highest in Surat, where all respondents were familiar with the term, followed by Ahmedabad at 95% and Baroda at 58%.

Respondents who were aware of heat waves were further asked about its meaning. Only 28%, with the highest proportion from Ahmedabad (43%), correctly identified it as a period of unusually hot weather lasting several days. Nearly 63% believed that a heat wave simply refers to a rise in temperature across the country, while 3% felt that it is rise in temperature near coastal areas. Another 6% stated that they had heard of the term but could not describe it.

Table 4: % Distribution of respondents by their awareness of heat wave

Location	% of respondents aware of 'Heat wave'	Defining 'heat wave'			
		Rise in temperature near coastal areas	Rise in temperature across the country	A period of unusually hot weather that can last days	I have heard the term heat wave but find it difficult to describe in my own words
Ahmedabad	95.4	3.7	46.5	43.3	6.4
Surat	100.0	2.9	93.3	3.8	0.0
Baroda	57.8	1.6	61.9	23.8	12.7
Total	86.6	3.1	63.1	28.2	5.6

The majority of FGD participants across the three locations were familiar with the term "heat wave." During qualitative interactions in Amraiwadi, Ahmedabad, participants who had received intensive training reported experiencing issues such as vomiting, high blood pressure, fainting, low blood pressure, diarrhoea, and fever during a heat wave. Some also mentioned that severe heat strokes could be fatal. According to an FGD participant from Surat, ***“Prolonged exposure to a heat wave weakens the body, raises body temperature, and blood pressure tends to drop.”***

The majority of respondents (98%) stated that they had heard of heat waves through MHT/Cooperative. Additionally, 13% mentioned learning about them through the news, while 5% and 3% reported hearing about heat waves from family/friends and social media, respectively.

Heat Risk Insurance Awareness

In the quantitative survey, approximately 92% of respondents reported awareness of heat risk insurance, with 100% in Surat, 94% in Ahmedabad, and 80% in Baroda indicating familiarity with the term. However, when probed further, only 84% of those aware could correctly define it as coverage against damage from heat. This indicates that 78% of the total sample demonstrated accurate awareness of heat risk insurance. In contrast, 8% misunderstood it as insurance for heat-related illnesses, and 5% believed it covered death from heat stroke.

Table 5: % Distribution of respondents by awareness of heat risk insurance

Location	% aware of heat risk insurance	Defining 'heat risk insurance'			
		Insurance in case of death from heat stroke	Insurance against damage from heat	Health insurance for illnesses related to heat	Don't know/not sure
Ahmedabad	94.4	8.1	83.8	7.6	0.5
Surat	100.0	0.0	100.0	0.0	0.0
Baroda	79.8	2.3	63.2	17.2	17.2
Total	91.9	4.5	83.6	7.7	4.2

The majority of respondents (99%) stated that they heard about heat risk insurance from MHT staff, while 1% mentioned receiving information from CAG members.

During the qualitative interactions, a majority of the FGD participants across the three locations, particularly those who received intensive training, were aware of heat risk insurance. They attributed their knowledge to information provided by MHT staff, CAG members, and Vikasinis, who also explained its benefits. However, an exception was noted in the non-intensive focus groups held at Zenith Park, Baroda, where most participants mentioned that they were unaware of heat risk insurance.

Premium Knowledge

Around 91% respondents stated that they were aware of the premium amount paid on their behalf for the heat risk insurance by MHT. While 99% of respondents from Ahmedabad and 98% from Surat reported knowing the premium amount, only 70% in Baroda indicated the same.

However, detailed knowledge of the premium amount was significantly lower. Only 10% of respondents from Ahmedabad correctly identified the premium range as Rs. 251–Rs. 500. In contrast, none of the respondents from Surat and Baroda could accurately specify the premium range.

Table 6: % Distribution of respondents by their awareness of the insurance premium

Location	% aware of 'premium m'	Knowledge about 'premium amount'					
		0-250	251-500	501-750	Above 750	751-1000	Above 1000
Ahmedabad	99.4	4.6	9.8	61.5	0.0	23.7	0.6
Surat	98.1	0.0	0.0	0.0	0.0	0.0	0.0
Baroda	70.2	0.0	0.0	0.0	0.0	0.0	0.0
Total	91.3	4.6	9.8	61.5	0.0	23.6	0.6

Focus group discussions revealed that in Baroda, most participants who received intensive training were aware that MHT had covered their premium for heat insurance, although very few knew the exact amount. In contrast, the situation in Surat was quite different, as the majority of FGD participants, including those who received intensive training, were unaware of the exact premium amount paid by MHT. Interestingly, in Ahmedabad, most participants regardless of whether they received intensive training were not only aware of the heat risk insurance scheme, but also knew that MHT had paid a premium of Rs. **354** on their behalf, which contrasts with the findings from Baroda and Surat.

Knowledge of Parameters for Payouts

At the aggregate level, 65% of respondents reported being aware of the criteria determining whether they received a payout. Awareness was highest in Ahmedabad, with 94% of respondents indicating they understood the parameters, compared to 42% in Surat and 38% in Baroda.

Upon further inquiry, 89% of respondents correctly identified that payouts are only issued if the temperature exceeds a specified threshold for two consecutive days. Ahmedabad had the highest proportion of respondents who provided the correct answer (94%), followed by Surat (91%) and Baroda (67%).

Table 7: % Distribution of respondents by their awareness of the payout parameters

Location	Awareness of Payout Criteria (%)	Payout parameters				
		Only if the temperature exceeds a certain amount for 2 consecutive days	Applicable only for working women	Applicable only to members of the credit cooperative	All of the above	Not sure
Ahmedabad	93.9	93.5	5.3	1.2	0.0	0.0
Surat	41.9	90.9	9.1	0.0	0.0	0.0
Baroda	37.5	66.7	0.0	2.56	28.2	2.6
Total	64.9	88.9	5.1	1.2	4.2	0.4

However, qualitative discussions revealed that most FGD participants in Ahmedabad were unaware of the specific payout parameters. Although they generally understood that a payout would occur if the temperature exceeded a certain limit, none were familiar with the exact criteria: Rs. 1,250 if the temperature exceeds 44.1°C and Rs. 750 if it exceeds 43.7°C, with the condition that these temperatures must persist for two consecutive days. Additionally, participants were unclear about the duration of the heat insurance coverage. Some correctly noted a four-month coverage period, while others mistakenly believed it was limited to only two months - May and June.

“The MHT staff had previously informed us of the conditions for the payout, but since it was a long time ago, we have forgotten” - FGD participants from Ahmedabad

In contrast, FGD participants from Surat and Baroda were only aware that they did not receive a payout because the temperature did not exceed a required level. None were familiar with the specific temperature criteria nor the condition that the threshold must be exceeded for two consecutive days. Their understanding was limited to the general notion that the temperature was not high enough.

4.2 Ease of availing Insurance Scheme

Overall, 93% of respondents found the insurance scheme process easy, with 98% in Ahmedabad and Surat, and 80% in Baroda reporting the same. Similarly, at the aggregate level, 94% reported having the required documents to avail the policy, with 99% in Surat and Ahmedabad, and 82% in Baroda.

This was reiterated during focus group discussions across the three locations, where participants stated that the process of availing the insurance scheme was easy. They stated that they only needed to submit photocopies of documents such as an Aadhaar card, bank passbook, and a passport-size photograph.

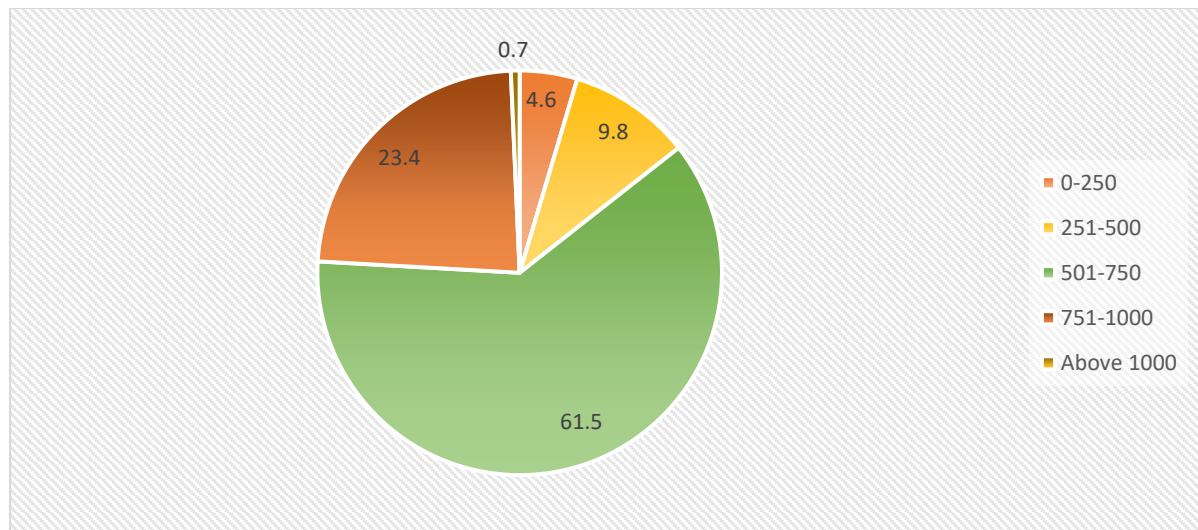
4.3 Payout Amount Received

Nearly 96% of respondents from Ahmedabad reported receiving the payout, whereas none from Surat and Baroda did, as temperatures in these locations did not meet the required criteria. When asked about the reasons for not receiving the payout, all respondents from Surat and 73% from Baroda cited that the temperature parameters were not met in their city, making them ineligible. An additional 21% of respondents from Baroda were unsure why they did not receive the payout. In Ahmedabad, all respondents who did not receive the payout were unaware of the reason. This lack of awareness could be attributed to the absence of organized trainings or meetings in these settlements.

Most FGD participants from both Surat and Baroda were aware that they did not receive the payout because the temperatures in their cities did not exceed the required threshold.

Among those who received the payout, 61% of respondents from Ahmedabad correctly identified the amount as being between Rs. 501-750, while 24% reported receiving between Rs. 750-1000. The remaining respondents were either unsure of the exact amount received, with 10% believing they received Rs. 251-500, and 5% stating they received Rs. 0-250. This uncertainty about the exact amount received could be attributed to infrequent visits to the bank or a lack of regular passbook checks.

Fig 4: % Distribution of respondents by amount received as payout

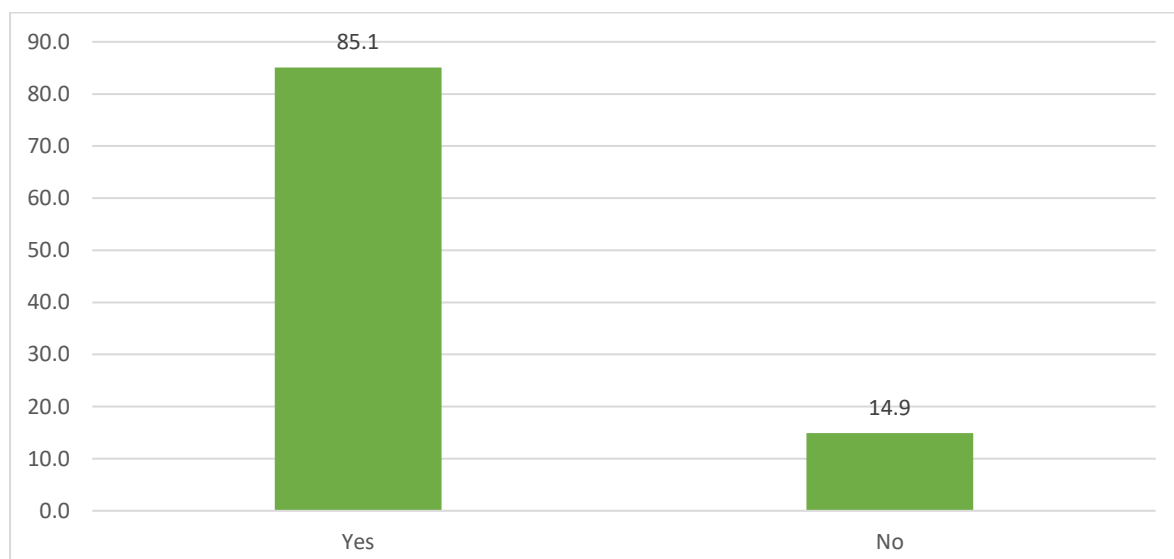


Focus group discussions in Ahmedabad revealed that while some participants were aware of the exact payout amount, many were not. Participants explained that since the amount was directly credited to their bank accounts, they were either unsure of the exact figure or had forgotten the details, as the payout was received several months ago. ***“They (MHT staff) had informed us about the payout amount, but we don’t remember since it was directly credited to our bank accounts”.*** This signifies that while the insurance payout was received, many beneficiaries did not actively track the amount. It could be due to women’s lack of engagement with financial details, record-keeping, or communication regarding benefit disbursements.

4.4 Adequacy of Payout amount

The majority of respondents from Ahmedabad (85%) felt that the payout amount was sufficient, while the remaining 15% believed it was inadequate. Those who stated that the payout amount was not adequate were further asked what was the amount they should have received. Around 46% stated that the payout should be Rs. 1000 for lower temperature, followed by 27% who mentioned Rs. 1500. Another 15% and 8% quoted an amount of Rs. 1200 and Rs. 2000 respectively.

Fig 5: % Distribution of respondents by sufficiency of payout



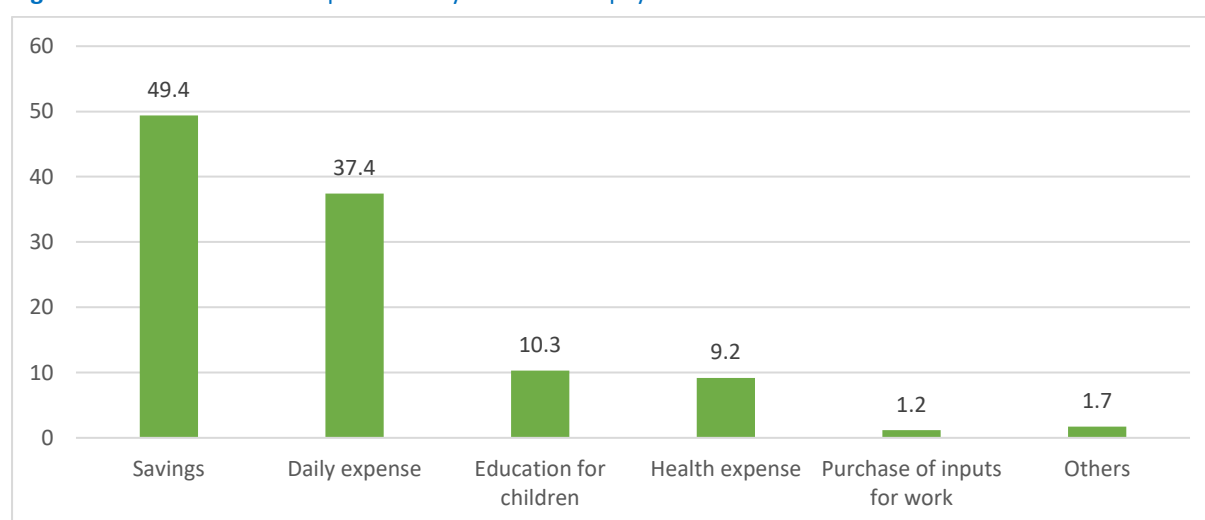
Regarding satisfaction with the payout process, more than half of the respondents (53%) reported being highly satisfied with aspects such as timeliness and ease of access, while 45% indicated they were satisfied. Most participants in the FGDs also expressed high satisfaction, noting that they encountered no difficulties in accessing the payouts and that the funds were credited to their bank accounts on time.

4.5 Socio-economic Impact of the Payout

Utilisation of the Payout

Regarding the utilization of the insurance amount, 49% of survey respondents reported keeping it in their savings accounts, while 37% used it for daily expenses. Another, 10% spent the money on children's education and 9% on health expenses.

Fig 6: % Distribution of respondents by utilisation of payout

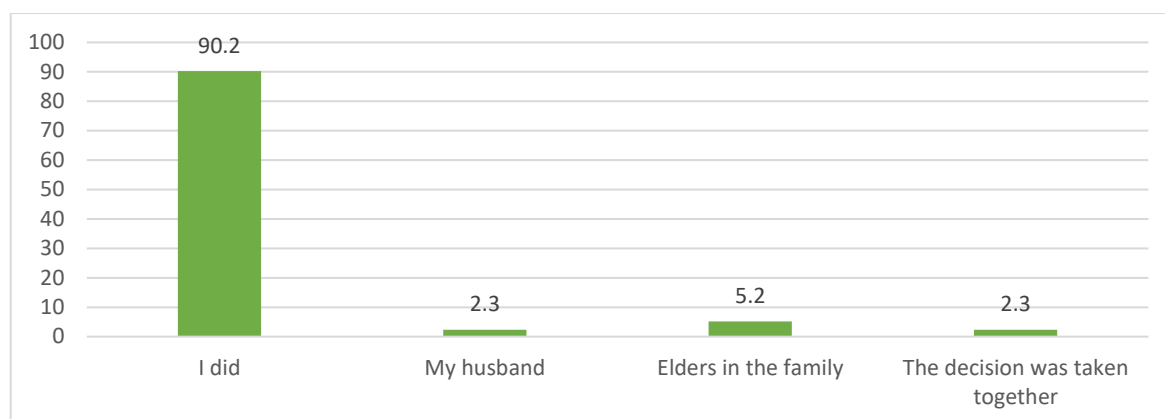


Qualitative interactions revealed that participants used the payout for essential needs, including household expenses, education, and medical costs. Some opted to save the amount for emergencies, while a few were unable to withdraw the money due to outstanding loans from the cooperative. An FGD participant shared that she used the payout money to purchase a cooler, supplementing it with her own funds.

Decision-making on Payout Utilisation

Over 90% of respondents who received the payout reported making independent decisions about its use, highlighting a strong sense of financial autonomy. Meanwhile, 5% said the decision was made by family elders, and 2% each mentioned that their spouse decided or that it was a joint decision.

Fig 7: % Distribution of respondents by decision-making authority on payout utilisation



Enhanced Financial Decision-Making due to Payout

A significant majority of respondents (97%) felt that the payout had increased their financial decision-making power within their households, with all respondents from Ahmedabad (100%) affirming this impact.

4.6 Coping Strategies and Intended Use of Payout (For Those Who Did Not Receive the Payout)

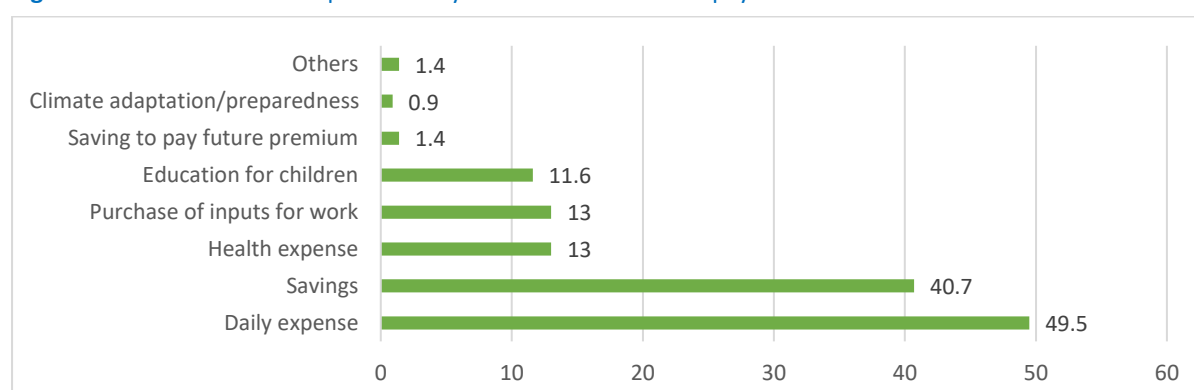
Coping Strategies

Respondents from Baroda, Surat, and a few from Ahmedabad who did not receive the payout were asked how they compensated for its absence. The highest percentage (44%) relied on their savings, while 32% continued working during the heat wave. Additionally, 13% worked extra hours, 11% borrowed money, and 9% managed by reducing their expenditures.

Intended Use of Payout

Respondents from Baroda, Surat, and a few from Ahmedabad who did not receive the payout were asked how they would have utilized the amount if they had received it. Half of the respondents stated that they would use the money for daily expenses, while 41% said they would save it. Additionally, 13% each mentioned they would allocate the funds for health needs and purchasing work-related inputs, while nearly 12% said they would spend it on their children's education.

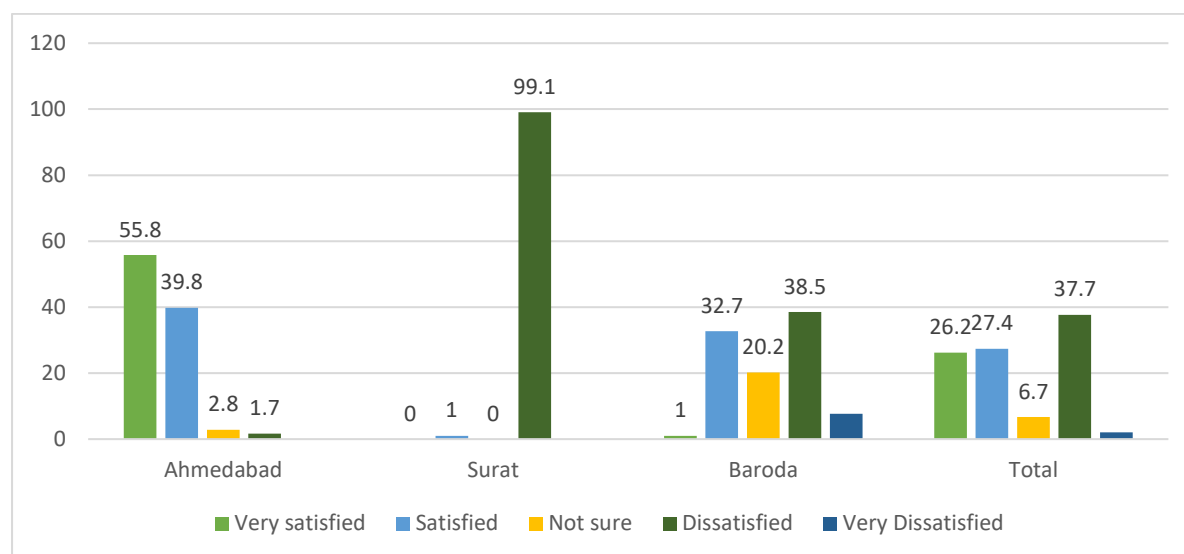
Fig 8: % Distribution of respondents by intended utilization of payout if received



4.7 Satisfaction with the Product

More than half of the respondents expressed satisfaction with the product overall, with 26% being very satisfied and 27% satisfied. Meanwhile, 40% were not satisfied, and 7% remained unsure. While the payout was positively received by a majority, a significant portion still found it inadequate or had mixed feelings. Those who were satisfied cited the payout's role in supporting household finances, covering medical expenses, paying electricity bills and funding children's education. Those who had not withdrawn the money stated that they intended to keep it for emergency situations, highlighting the payout's role as a financial safety net.

Fig 9: % Distribution of respondents by their satisfaction levels with the product



Although the majority of participants expressed satisfaction with the payout amount, some felt that a higher payout would be more beneficial, ideally around Rs. 1,000. An FGD participant who tailors shared, *"Our houses have tin roofs, and in the summer, it becomes unbearably hot. We run fans and coolers all day, leading to high electricity bills. Additionally, I cannot stitch clothes in the afternoon, reducing my earnings to half of what I normally make. That's why I believe the payout should be more than Rs. 1,000 for lower temperature"*.

4.8 Family Perceptions of the Insurance Scheme

When asked about their families' perceptions of the insurance scheme, 88% of respondents stated that their families viewed it as a good idea, while 12% had not discussed it with their families. In Ahmedabad and Surat, 99% and 92% of respondents, respectively, reported positive family perceptions of the scheme, compared to 56% in Baroda. Notably, Baroda also had the highest proportion of respondents (46%) who had not discussed the insurance scheme with their families.

4.9 Willingness to Avail Insurance Scheme

Availing the Scheme

Over 86% of respondents across all locations expressed a willingness to enrol in the insurance scheme, even if they had to pay the premium themselves. In Ahmedabad and Surat, all respondents (100%) were ready to enrol, whereas in Baroda, only half indicated their willingness. Additionally, about 12%

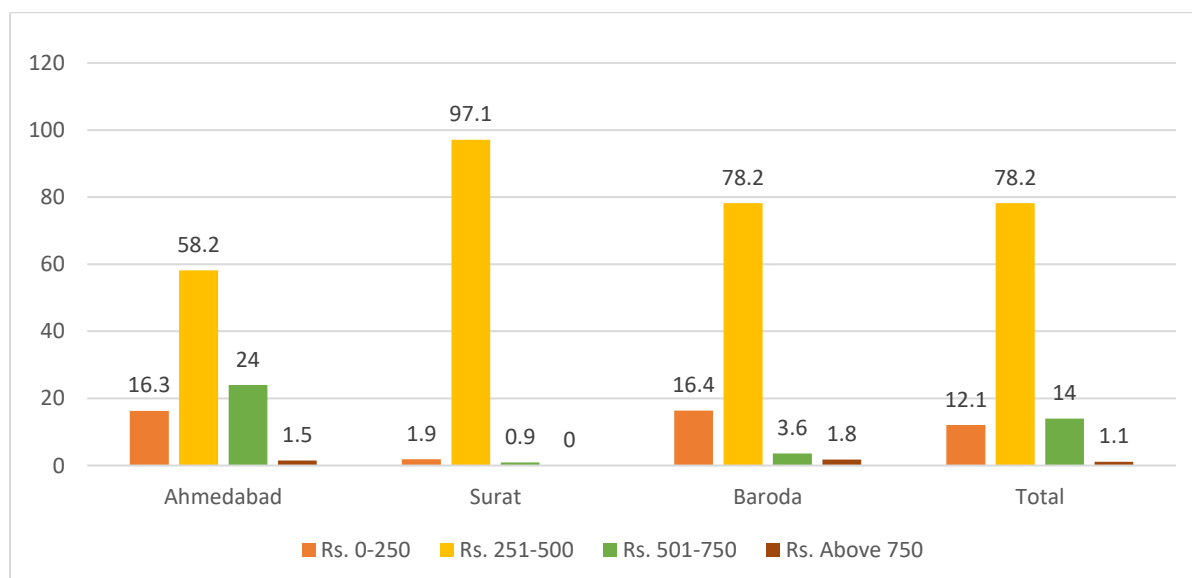
of respondents from Baroda were uncertain about availing of the scheme. Most focus group participants across all locations also expressed their willingness to participate in the insurance scheme.

Respondents from Baroda who were either unwilling or unsure about availing the insurance scheme were asked to share their reasons. The majority (67%) reported losing interest because they did not receive any benefit or payout last year. Additionally, 50% felt the insurance was not useful, while 43% considered the premium too expensive. Furthermore, 19% each believed that the payout was insufficient or that their productivity was unaffected by heat. Lastly, 11% preferred to allocate the premium amount to other expenses.

Willingness to Pay Premium Amount

The majority of respondents (78%) willing to avail the insurance scheme indicated a willingness to pay a premium between Rs. 250-500 to cover their loss and damage due to heat. Additionally, 12% preferred a premium below Rs. 250, while 14% were open to paying between Rs. 501-750. The highest proportion of respondents willing to pay Rs. 251–500 was in Surat (97%), followed by Baroda (78%) and Ahmedabad (58%).

Fig 10: % Distribution of respondents by their willingness to pay



Even during the focus groups in all the three locations maximum participants were willing to pay the premium for the scheme. Most of them expressed willingness to pay a premium in the range of Rs. 100-500. However, a few participants from Baroda and Surat requested that the heat risk insurance threshold be lowered to 38–42°C, as temperatures in these cities rarely exceed 42°C. They emphasized that they would only benefit from the insurance if the threshold was lowered.

Expected Payout Amount

When asked about the expected payout, 73% of respondents suggested an amount between Rs. 500 - 1,000. Additionally, 14% preferred a payout between Rs. 1,000-2,000, while 12% believed it should be up to Rs. 500.

Most FGD participants, especially those engaged in home-based work like tailoring, embroidery, lacework, and zardozi stone work, suggested that the expected payout should range between Rs. 1,500

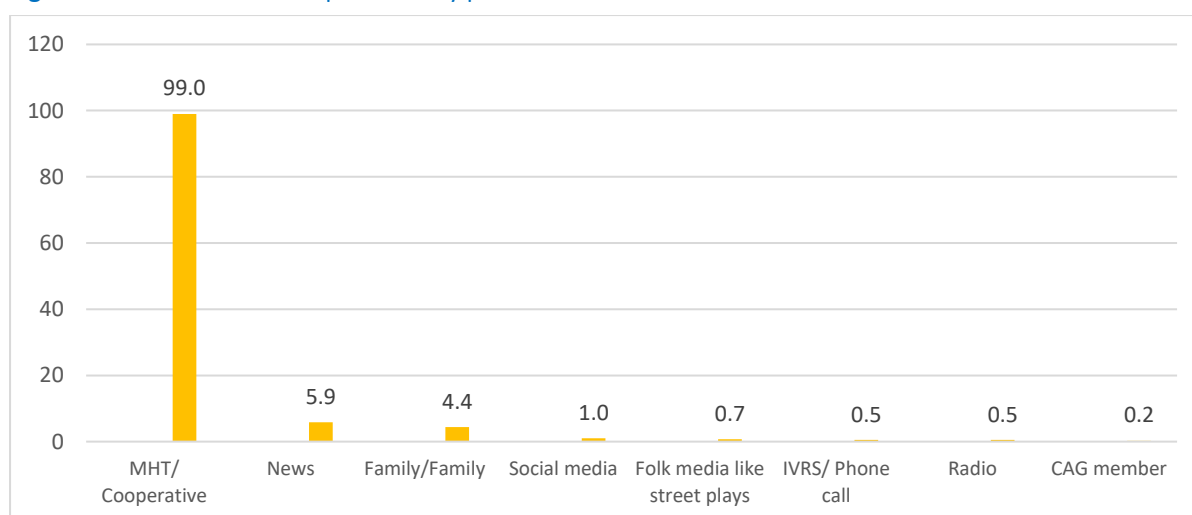
and Rs. 5,000. They highlighted that during summer, their productivity declines while electricity bills nearly double compared to other seasons as they rely on fans and coolers throughout the day.

“My husband works in a factory and earns Rs. 12,000 per month. Last summer, he fell ill and couldn’t work for 15 days, receiving only half his salary. I do some tailoring work, but since I had to care for him, I couldn’t earn anything during that time. Managing household expenses became extremely difficult, which is why I believe the payout should be at least Rs. 5,000”. an FGD Participant in Ahmedabad revealed.

4.10 Preferred Source of Insurance Scheme Information

Maximum respondents (99%) wanted to receive the information about the insurance scheme through MHT/Cooperative. Nearly 6% also mentioned that the information could be conveyed through news and 4% stated family and friends. Cent percent respondents from Surat were interested in receiving the information through MHT/Cooperative.

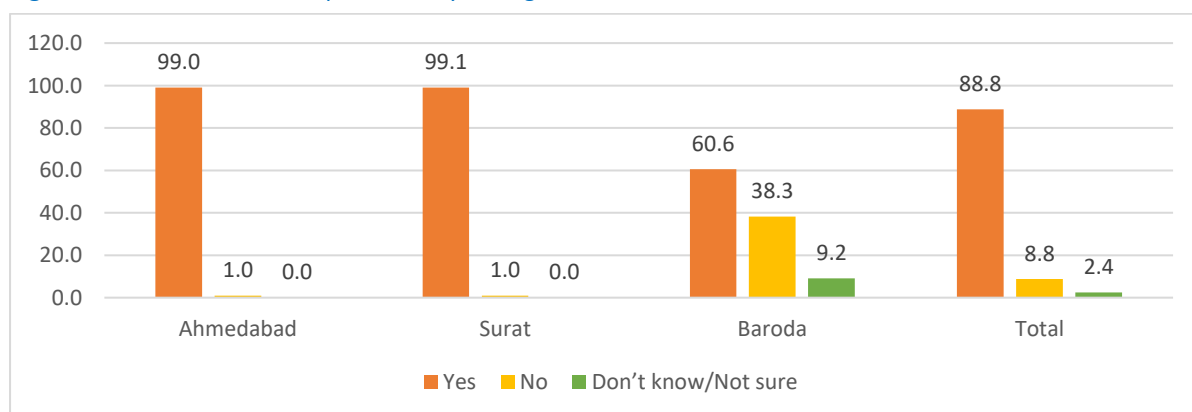
Fig 11: % Distribution of respondents by preferred source of insurance scheme information



4.11 Product Recommendation

Around 89% of the survey respondents stated their willingness to recommend the insurance scheme to others 9% were not and 2% were not sure.

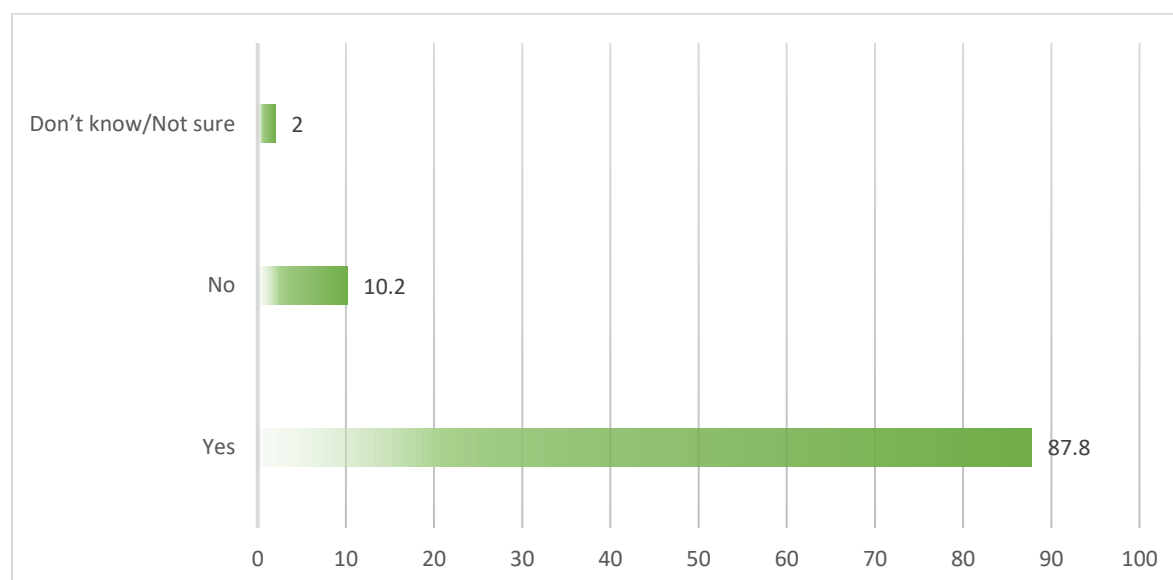
Fig 12: % Distribution of respondents by willingness to recommend the scheme



4.12 Preference for Monsoon Risk Insurance

A significant majority of the respondents (88%) believed the insurance scheme would be especially useful during the monsoon season and 10% felt it will not be useful. Nearly 2% were unsure.

Fig 13: % Distribution of respondents by their perceived usefulness of the insurance scheme during monsoon



The focus group discussions with participants across the locations strongly affirmed that the insurance scheme would be highly beneficial during the monsoon. Participants from Ahmedabad mentioned that during the monsoon, streets often flood, making it difficult for men and women to go to work. Many private companies shut down, and rickshaw and auto drivers are unable to earn as most people stay home. Consequently, they lose out on wages and income. Similarly, women engaged in home-based work also face challenges, as they cannot receive raw materials such as vegetables for cutting or laces and stones for stitching due to mobility restrictions. Moreover, during heavy rains the roofs get damaged, causing water to leak inside. Repairing these damages leads them to incur significant expenses.

FGD participants from Gyatri Nagar, Surat, who are engaged in lacework and diamond work shared that they are not able to work during the monsoon as they need to travel to Varachha to collect raw materials. However, due to flooded streets, they are unable to make the journey, leaving them without work for several days. A woman from Surat shared, ***"I am a street vendor and sell snacks and my husband is a cobbler. During the monsoon, we both can't work because our business is outdoors. As a result, we have to rely on our meagre savings during this time"***. A payout during this period would be a great support for us.

Similarly, a participant from Baroda whose family occupation was farming shared that during heavy rains the grains they have harvested often get wet and spoil. Additionally, she was scared of being bitten by poisonous snakes while working in the fields. Due to the various challenges during the monsoon, the income reduces to half of what they normally earn. As a result, they strongly advocated for a monsoon risk insurance scheme.

Section 5: Operational Challenges

Limited Awareness and Understanding of Insurance Products: Most of the women had limited formal education and did not have an idea of health or life insurance. As a result, the cooperative faced challenges in explaining the importance of the heat risk insurance scheme. Without prior exposure to similar financial products, many beneficiaries struggled to grasp how the scheme worked and why it was necessary, leading to hesitation and scepticism.

Tight Implementation Timeline and Inadequate Awareness Sessions: The heat risk insurance scheme was launched in February, and the cooperative was required to submit the details of 26,000 beneficiaries, including their Aadhaar cards and bank details, by April. Due to this tight deadline, the process had to be rushed, leaving little time for proper beneficiary training and awareness sessions about the scheme. This limited outreach contributed to confusion and misunderstandings among beneficiaries regarding the scheme's criteria and benefits.

Challenges in Collecting Beneficiary Information for Insurance Payouts: Initially, the insurance company requested a list of 26,000 beneficiaries to be insured. However, they later clarified that in the event of temperatures exceeding the trigger parameter, payouts would need to be transferred directly to all beneficiaries, requiring their bank account details. This posed a significant challenge for the cooperative, as they did not have access to the beneficiaries' bank account details, contact numbers, or Aadhaar cards. Collecting this information became a major task for the field staff. Also, some beneficiaries were hesitant to share their bank details, making the process even more difficult. Another key issue was that while many beneficiaries had bank accounts, their KYC was pending, Aadhaar card updates were incomplete, and they frequently changed phone numbers. As a result, it was difficult for them to receive important messages circulated through IVRS and other communication channels, adding to the challenge of ensuring smooth payouts.

Complicated Financial Transactions and Coordination: The cooperative first had to credit the premium amount of Rs. 354 to the bank accounts of all 26,000 beneficiaries before debiting the same amount for payment to the insurance company. This process was not only time-consuming, but also required meticulous coordination to ensure accuracy. Managing such a large-scale financial transaction within a limited time frame added to the complexity, especially given the challenges of verifying beneficiary details and addressing discrepancies.

Mismatch in Temperature Data and Payout Expectations: The insurance company relied on ERA5 data to determine whether the temperature had exceeded the threshold for payouts. However, beneficiaries often referred to Indian Metrological Department reports, which sometimes showed higher temperatures than ERA5 readings. This mismatch led to confusion and frustration among beneficiaries, making it difficult for MHT/cooperative staff to manage expectations and explain why some claims were not eligible.

Misunderstandings about Payout Trigger Conditions: Many beneficiaries did not fully understand that payouts would only be triggered if the temperature exceeded specific thresholds. As a result, they frequently contacted MHT/cooperative staff, assuming they were eligible for payouts based on temperature readings from their mobile apps or newspapers. Field staff faced significant challenges in repeatedly clarifying the specific payout criteria and explaining why certain reported temperatures did not qualify.

Section 6: Learnings & Recommendations

- **Lowering the Temperature Threshold for Heat Risk Insurance in Baroda:** Several participants from Baroda highlighted that the current threshold of 43.7°C for heat risk insurance eligibility is rarely reached in the region, making it difficult for residents to benefit from the payout. Based on their feedback, it is recommended to lower the threshold to 40-42°C, which would increase the likelihood of claims and make the insurance more accessible and beneficial for the community. This adjustment would better align the policy with local climate conditions and offer enhanced protection to Baroda's residents.
- **Addressing Misconceptions in Surat:** In Surat, despite a lower threshold for heat risk insurance, many residents, particularly women beneficiaries, mistakenly believe that the threshold is the same as in Ahmedabad (43.7°C). To correct this misconception, it is essential to focus on targeted awareness and education campaigns for the women beneficiaries, ensuring they understand the specific eligibility criteria and how they can access the benefits of the insurance.
- **Expanding Climate Risk Insurance Coverage:** The research emphasizes the potential for expanding climate risk insurance to cover a wider range of climate-induced challenges. While heatwaves are a significant concern, participants indicated that the monsoon season also presents substantial hardships, such as income reduction due to flooded streets, work disruptions, and loss of earnings. There is strong support for introducing a monsoon risk insurance scheme. This would provide financial assistance to mitigate the economic impacts of the monsoon season, addressing the full spectrum of weather-related challenges faced by vulnerable populations. A majority of respondents across various locations expressed interest in such coverage, underlining the need for comprehensive climate protection products.
- **Enhancing Awareness and Accessibility of Heat Risk Insurance:** The research highlights the importance of improving awareness and understanding of heat risk insurance, particularly among women from lower-income groups. While many women were familiar with the concept of heat risk insurance, there was a clear gap in their understanding of key details such as premiums, payout criteria, and the specific temperature thresholds that trigger payouts. This points to the need for more targeted outreach and consistent education efforts. It's essential to focus on clear and repeated communication about the specifics of the coverage, especially given the low literacy levels and financial pressures faced by these communities. Simplifying the messaging and making it accessible would increase comprehension and retention.
- **Tailoring Financial Solutions to the Needs of Low-Income Women:** The study reveals a pressing need for more accessible financial solutions specifically designed for low-income women. While the concept of payouts was positively received, many women felt that the amounts provided were insufficient to cover the full extent of their financial losses. This highlights the need for future iterations of the insurance product to offer higher payout amounts, particularly considering the dual financial burden faced by women during extreme weather events. These burdens include not only loss of income, but also increased expenses related to heat-related relief measures. Enhancing the payout amounts would better address the financial strains on these vulnerable groups.

References

- Intergovernmental Panel on Climate Change (IPCC). (2021). *Climate Change 2021: The Physical Science Basis*. Contribution of Working Group I to the Sixth Assessment Report.
- International Labour Organization (ILO). (2018). *World Employment and Social Outlook 2018: Greening with Jobs*.
- International Labour Organization (ILO). (2019). *Working on a Warmer Planet: The Impact of Heat Stress on Labour Productivity and Decent Work*.
- United Nations. (2019). *World Urbanization Prospects: The 2018 Revision*. UN Department of Economic and Social Affairs (UN DESA).
- UN DESA. (2018). *World Urbanization Prospects: Key Facts and Trends*.
- Ahmed, S., Satyam, V., & Kumar, R. (2021). *Heat stress and informal labor: Policy gaps in India's urban heat action plans*. *Journal of Climate Resilience*, 18(2), 45–59.
- Basu, R., & Samant, K. (2020). *Assessing the Urban Heat Island effect in Indian slums: A micro-climatic study*. *Environmental Research Letters*, 15(8), 085005.
- Imran, M., Tripathi, S., & Kumar, D. (2019). *Heat stress and health risks among urban informal workers in India*. *International Journal of Environmental Health Research*, 29(6), 703–720.
- Rao, N., Sugden, F., & Mishra, A. (2022). *Gendered impacts of climate change in Indian cities: Heat stress and women's everyday resilience*. *Climate and Development*, 14(3), 250–267.
- Sharma, P., & Bhattacharya, S. (2023). *Economic vulnerability of informal women workers under climate extremes: A case study from India*. *Urban Climate Journal*, 49, 101024.
- World Health Organization (WHO). (2021). *Climate change and health: Heat stress impacts on vulnerable populations*. WHO Report No. 67.

