The "Transition Generation": Gen Z's Social Representations of Climate Change in Malaysia

("Generasi Transisi": Representasi Sosial Gen Z terhadap Perubahan Iklim di Malaysia)

NOR FARIZA MOHD NOR [1*], AZLINA ABDULLAH [2], INTAN SAFINAZ ZAINUDIN [1] & JAMALUDDIN AZIZ [3]

[1] Center for Research in Language and Linguistics, Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia, Malaysia
[2] Center for Research in Development, Social and Environment, Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia, Malaysia
[3] Center for Research in Media and Communication, Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia, Malaysia

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ABSTRACT

Climate change remains a heavily debated global challenge, yet public understanding is frequently obscured by abstract scientific narratives. This exploratory study utilizes Moscovici's Social Representation Theory (SRT) to examine how a group of Generation Z in Malaysia, commonly referred to as the "Transition Generation", perceives climate change and defines their role in addressing it. This qualitative research used semi-structured group interviews with 15 university students aged 20 to 22 from a public university in Malaysia. The interview data was qualitatively analyzed, using open coding method, and then mapped onto anchoring and objectification categories from SRT. The findings reveal that majority of participants classify climate change as a critical threat requiring urgent intervention. Rather than treating the crisis in abstract scientific concept, the Gen Z in this study anchor abstract concepts within lived local experiences, such as intensifying heatwaves, irregular monsoons, flash floods, and landslides. Through objectification, they translate the lived experiences of dealing with climate change crisis into reported practices like reducing single-use plastics, conserving energy, and avoiding food waste. Furthermore, they leverage on digital platforms to share knowledge about climate change and spread awareness about climate change in Malaysia. In conclusion, this exploratory study demonstrates how this group of Gen Z translate their understanding of climate change into reported practices and civic awareness. The study proposes that green initiatives and localized environmental communication must be made available to this group to empower them to help transform environmental policies into localized green actions.

Keywords: Gen Z; climate change; social representation theory; environmental discourse; eco-anxiety; green initiatives

ABSTRACT

Perubahan iklim ialah cabaran global yang sering diperdebatkan, namun pemahaman awam sering kali kabur disebabkan oleh naratif saintifik yang abstrak. Kajian penerokaan ini menggunakan Teori Representasi Sosial (SRT) oleh Moscovici untuk meneliti persepsi Generasi Z di Malaysia, yang sering dirujuk sebagai "Generasi Transisi", terhadap perubahan iklim dan persepsi mereka mengenai peranan mereka dalam menangani isu ini. Penyelidikan kualitatif ini menggunakan temu bual kumpulan separa berstruktur yang melibatkan 15 pelajar universiti berusia 20 hingga 22 tahun dari sebuah universiti awam di Malaysia. Data temubual dianalisis secara kualitatif menggunakan kaedah pengekodan terbuka dan kemudian dipetakan kepada mekanisme kognitif anchoring dan objectification.

[*] *Corresponding author: fariza@ukm.edu.my*

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Dapatan kajian mendapati majoriti responden mengklasifikasikan perubahan iklim sebagai ancaman kritikal yang memerlukan tindakan segera. Dapatan kajian bagi kategori anchoring mendapati Gen Z di dalam kajian ini tidak melihat krisis tersebut sebagai konsep saintifik yang abstrak, malahan kumpulan ini mengaitkan konsep saintifik yang abstrak kepada pengalaman perubahan iklim yang mereka lalui, seperti gelombang haba yang semakin meruncing, musim monsun yang tidak menentu, banjir kilat dan tanah runtuh. Melalui kategori objektification, mereka menterjemahkan pengalaman mereka dalam mendepani krisis perubahan iklim kepada amalan seperti mengurangkan penggunaan plastik, menjimatkan tenaga dan mengelakkan pembaziran makanan. Seterusnya, mereka memanfaatkan platform digital untuk berkongsi ilmu dan menyebarkan kesedaran kepada masyarakat tentang perubahan iklim di Malaysia. Kajian ini menyimpulkan kumpulan Gen Z yang terlibat dalam kajian ini menterjemahkan pemahaman mereka tentang perubahan iklim kepada bentuk amalan tertentu dan kesedaran sivik. Kajian ini mencadangkan agar kempen inisiatif hijau dan komunikasi alam sekitar yang disesuaikan dengan konteks tempatan dikongsikan dengan golongan ini, untuk memperkasakan mereka dalam membantu mengubah dasar alam sekitar menjadi tindakan hijau di peringkat tempatan.

Kata kunci Gen Z; perubahan iklim; Teori Representasi Sosial; wacana alam sekitar; kebimbangan ekologi; inisiatif hijau

INTRODUCTION

Climate change is an issue filled with contradiction, and this irony is supported by climate change discourse. The concept itself is constantly debated and challenged (Corner et al., 2020). For some experts, the term "climate change" fails to capture the urgency of climate disaster or catastrophe, arguing that it reinforces the idea of a natural, necessary evolution rather than the catastrophic result of human intervention (Fischer & Newig, 2021; Taylor & Smith, 2022). On the other hand, the term is narrated as "urgent and long term," "personal and institutional," and "local and global" (Hulme, 2021; O'Neill & Nicholson-Cole, 2023). Consequently, alternative framing is required to encourage real action without causing people to give up.

This study focuses on Gen Z because their role is pivotal in the current climate change landscape. They grew up during a period of increasing and visible climate-related disasters. Featuring the findings of a survey of 13,749 U.S. adults, with 912 specifically identified as Generation Z, published by the Pew Centre (2021), and authored by Tyson et al. (2021), climate change was repeatedly identified as a top priority impacting the group's interests, activism actions, and digital media engagement. Research and past studies globally generally yielded results which indicated high levels of climate concern among young people. *The People's Climate Vote* reported that younger respondents were more likely than older groups to regard climate change as a global emergency and to support stronger climate policies (UNDP & University of Oxford, 2021). Similarly, Hickman et al. (2021) found that many young people experienced fear, sadness, anger, guilt and anxiety about climate change. These emotions were associated with perceptions that governments were not doing enough. Additionally, Corner et al., (2015) reported that young people consistently reported high levels of awareness and concern about climate change compared to older demographics. Despite the heightened awareness about climate change, there is a need to further examine Gen Z's perceptions about climate change as proposed by Scoville-Simonds (2018) who emphasized the need to examine how the emergence of this new cohort influences news and discursive norms. This echoes Rousell and Cutter-Mackenzie-Knowles (2020) who reported that climate communication has traditionally treated youth as passive consumers of scientific knowledge rather than people who take action and drive change in their communities.

Past studies in Malaysia indicated that climate change awareness is relatively widespread, particularly among students and urban residents. Malaysian youth are generally exposed to information about climate change mainly through social media, television and online news. Their perceptions are influenced by direct experiences of floods, heat, haze, water shortages and other environmental problems. Malaysia's exposure to flooding and climate-related risks has made climate change increasingly relevant to public discussions and national policy (Government of Malaysia, 2021). Studies involving Malaysian young people generally reported moderate to high levels of environmental awareness and concern, ranging from understanding general ideas such as global warming and pollution, to having less scientific knowledge of climate change, national climate policies and climate mitigation actions (Mohd Mahudin & Syed Lokhikmal Hakim, 2023; Ridzuan et al., 2022; Nor Khairina et al., 2024). Although national reports acknowledged Malaysia's vulnerability to climate change and the need for public participation, climate education and behavioural change, there remains an empirical gap and a theoretical gap regarding how Malaysian Gen Z processes the concept and risks of climate change in everyday life and translates their awareness into actions.

REVIEW OF LITERATURE

This section reviewed past studies on how generation Z who are digital natives perceive environmental change. A survey conducted by The Pew Center (2021) found that Gen Z is the only demographic group in which a majority held a distinctive relationship with climate change. This generation consistently ranked climate change among its "top five" concerns, with over 50% naming it their most pressing policy concern. However, this heightened political engagement has not been translated into positive emotional outcomes. Research on the psychological toll of climate awareness, often termed "eco-anxiety" or "climate anxiety" yielded how this generation experienced the crisis. Ágoston (2020), Pihkala (2022), and Tsevreni et al. (2023) concurred that eco-anxiety among Gen Z is translated as encompassing a broad constellation of adverse emotional responses, including worry, fear, anger, and despair, triggered by awareness of ecological breakdown. Coffey et al.'s (2021) study characterized climate anxiety experienced by Gen Z as a constellation of emotions arising directly from the recognition that climate change is actively unfolding; a recognition they noted is not localized but observed globally among young people. The Pew Center (2021) established the scale and intensity of Gen Z's political engagement with the issue, while past studies on eco-anxiety (Ágoston, 2020; Pihkala; 2022; Tsevreni et al. 2023; Coffey et al., 2021) explained the emotion that underlies Gen Z's engagement with climate change is not simply a policy matter for this generation but a lived, emotional reality. A contradiction somewhat arises; the same awareness that drives Gen Z's prioritization of climate policy also seems to a certain extent to be a source of their psychological distress. This corresponds to Hickman et al's (2021) study in which 45% of Gen Z's respondents reported that the climate change situation contributed to their psychological distress due to the disruption of their normal daily routines, and the remaining 55% of the respondents experienced high to extreme levels of climate-related anxiety.

Globally, this phenomenon of "eco-anxiety" was reported by Clayton et al. (2022) among young British aged 17-24. Data from their survey on 10,000 young people from 10 countries around the world (Australia, Brazil, Finland, France, India, Nigeria, the Philippines, Portugal, the UK and the US) reported consistent patterns. The global survey shows that a high percentage of

the respondents, at 60%, indicated that climate change is a cause of concern, while 40% of the respondent reported that the eco-anxiety feeling has a negative effect on their daily lives. Many respondents expressed negative eco-anxiety emotions such as fear, sadness, anger, a sense of helplessness, guilt and anxiety. Reyes et al. (2026) found significant differences associated with gender among most of the variables for their Filipino participants. Female respondents frequently expressed higher concern about climate change, which was reflected in the higher ratings of negative emotions and negative thoughts about the future. Male respondents, on the other hand, exhibited lower level of concern about climate change and expressed greater confidence in how the government handle climate change issues and problems. Reyes et al. (2026) concluded that differences in the results demonstrated that countries differ in many ways, including economic development, impacts and threatened impact of climate change, political system, and even representativeness of the sample in the present study (samples from countries where a smaller proportion of the population has digital access is considered as less representative). The global literature from Hickman et al. (2021) to Clayton et al. (2022) established a consistent pattern. Gen Z's climate engagement is inseparable from psychological distress.

Moving on to the Malaysian context, Mohd Mahudin and Syed Lokhikmal Hakim (2023) exploratory study examined climate anxiety and its relationship with perceived government responses among 150 Malaysian youth aged 19 to 25 using survey method. Participants reported high climate anxiety, with more than 60% feeling afraid, powerless, guilty, helpless, and sad, along with negative thoughts about climate change and negative ratings of government responses. The researchers concluded that the Malaysian youth's psychological distress is compounded by a feeling that they are not adequately protected or heard by policy responses. Ridzuan et al. (2022) examined how Malaysian youth engaged in flood disaster response using a survey method. The Malaysian youth have played a prevalent role in current and post-flood response, assisting victims by providing food and saving lives using resources like boats and rafts, often mobilized through university-affiliated institutions that supply resources such as buses and funding. Additionally, Nor Khairina et al. (2024) addressed how Gen Z perceived climate change and the phenomenon of so-called "eco-anxiety". Gen Z perceived climate change as a threat that disrupted their mental well-being, with most admitting their anxiety about the future and experiencing a sense of threat and fear because climate change disrupted their life.

A large-scale survey in Malaysia involving 1,393 respondents by the United Nations development programme (UNDP) and UNICEF Malaysia's project (2020) studied climate change knowledge, personal attitudes, and systemic perceptions of youth and young adults across urban and non-urban demographics in Malaysia. 92% the respondents classified climate change as a critical environmental crisis requiring immediate intervention because they had experienced a climate-related impact (such as severe haze or flooding) within the preceding three years. The report concluded that Malaysian youth are aware of climate change issues, yet they encounter structural and financial barriers to practicing a greener lifestyle, which demonstrates the need for better environmental communication and more accessible green policies for the public. Studies by Mohd Mahudin and Syed Lokhikmal Hakim (2023), Ridzuan et al. (2022), and Nor Khairina (2024) demonstrated that Malaysian Gen Z has direct exposure to climate change, experiences psychological distress and get engages in active responses. This shows that Malaysian Gen Z's climate engagement is rooted in lived, embodied experience (flood, haze, heat) rather than solely mediated by digital discourse.

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The findings by the UNDP, UNICEF Malaysia, Mohd Mahudin and Syed Lokhikmal Hakim (2023), and Ridzuan et al. (2022), and Nor Khairina et al. (2024), are consistent with Gen Z's pessimism about climate change as reported in the West (Hickman et al., 2021; Clayton et al., 2022). Hickman et al.'s (2021) and Clayton et al.'s (2022) findings on how climate change disrupted the daily lives of the Gen Z in their study are also similar to the Gen Z's experience about climate change in Malaysia. Gen Z in Malaysia has direct, lived experience about a climate-related impact, such as haze or flooding, which disrupted their lives than abstract or media-driven awareness. For the Malaysian youth, the climate crisis is not merely a threat, but a direct tangible experience, which suggests that environmental exposure plays a pertinent role in climate change perceptions among Gen Z, rather than from digital consumption of climate discourse. The emphasis on direct environmental exposure aligns with the empirical data gathered by Juhari et al. (2024), who did a survey on Malaysian youth (aged 20 to 24) about strategies that can be developed for ecosystem sustainability and overcoming climate impacts. The Malaysian Gen Z identified four strategies to sustain the ecosystem and overcome climate impacts: strong governance and institutional accountability, structured eco-education to develop and improve environmental literacy, the active practices of personal green habits, and active involvement across all segments of society.

The reviewed literature reveals two significant points about climate change perceptions among Gen Z. First, eco-anxiety is a constellation of emotional distress among Gen Z (Ágoston, 2020; Coffey et al., 2021; Pihkala, 2022; Tsevreni et al., 2023). Second, Gen Z's experience of climate change disrupts their daily lives (Clayton et al., 2022; Hickman et al., 2021). In the Malaysian context, past studies have documented Gen Z's direct experience of climate change impacts (UNDP/UNICEF, 2020; Mohd Mahudin & Syed Lokhikmal Hakim, 2023; Ridzuan et al., 2022; Nor Khairina et al., 2024).

THEORY

Social Representation Theory (SRT) was initially developed by a French psychologist Serge Moscovici in 1961, during his exploration of how the French public responded to and reshaped the concept of psychoanalysis as it entered everyday discourse and popular understanding. Psychoanalysis is a key concept in social psychology that helps us understand how individuals and communities interpret complex or unfamiliar ideas. The combination of sociology and psychology renders the theory suitable for this study as it explains how people, communities, and societies make sense of unfamiliar, complex, or abstract ideas. This study examined Gen Z's social representation of climate change in Malaysia. Social representations form a dynamic framework that shapes how people perceive reality and communicate with one another. This makes SRT the most suitable theory for this study. For instance, the concept of climate change to the general public is usually understood through social representations like media portrayals of climate disasters, such as floods or haze that often depicts climate change as an urgent crisis that needs immediate action.

Moscovici (2008) argues that the human mind uses two fundamental cognitive and social processes: anchoring and objectification. This means that the human mind is actively transformed by social groups into shared, communicable understandings through these two cognitive-social mechanisms. Anchoring refers to the process of linking new or abstract ideas to existing knowledge, beliefs, or experiences to make them more understandable and relatable. This means

that when an individual encounters a new concept, they often try to connect it to familiar ideas or experiences. Consequently, this helps establish the new information in their existing framework of understanding. The present study, therefore, adopts SRT not merely as a descriptive lens on "how people interpret ideas," but as a structured analytical sequence that traces the public discourse to individual perceived responsibility and action, specifically:

Climate change discourse → Anchoring → Objectification → Social representation → Perceived responsibility/action. This sequence is used in the data analysis process. Each stage will be explained in the Methodology section.

STATEMENT OF THE PROBLEM

Undeniably, how climate change is communicated is of immense importance in raising public awareness and promoting collective action, particularly among youth (Tasha Erina Taufek et al., 2021). As a nation grappling with its own green transitions, sustainable environmental policies, and deforestation concerns, Malaysia presents a complex discursive landscape that directly shapes the climate mindsets of its young citizens Malaysia. As the "Transition Generation," the Malaysian generation Z stands at a critical juncture: they have a better understanding of climate literacy and awareness driven predominantly by an influx of social media information (Suhaimi & Hashim, 2025), yet they encounter barriers in translating this awareness into daily pro-environmental action (Mohd Radzi et al., 2024). These include the perceived "technical" nature of climate information, which often leads to information confusion and scepticism towards government environmental policies.

The reviewed past studies in the Malaysian context study examined Malaysian Gen Z's perceptions about their climate-change related experience using survey method (UNICEF/UNDP, 2020; Mohd Mahudin & Syed Lokhikmal Hakim, 2023; Ridzuan et al., 2022 and Nor Khairina et al., 2024). Therefore, an understanding of how this demographic group perceives the state of climate change in Malaysia via a qualitative approach is timely to document Gen Z's awareness about climate change and their climate engagement. Furthermore, to address the theoretical gap, this study employs Social Representations Theory (SRT), which is situated at the intersection of sociology and psychology. SRT explains how social groups make sense of abstract, complex phenomena through shared cultural and communicative practices. While global literature relies heavily on broad quantitative surveys, SRT provides a framework to capture the qualitative, socio-cultural elements of how Malaysian Gen Z transforms climate perceptions into social practices. By relating past global studies on Gen Z's perceptions of climate change to the Malaysian context, this study contributes to understanding Gen Z's participation in climate change issues and provides insights into how we can encourage meaningful engagement in climate action among this demographic in Malaysia. Based on this premise, the questions to be addressed in this study are:

1. How does Malaysian Gen Z socially represent climate change through processes of anchoring and objectification?
2. How do these social representations shape their perceived roles and responsibilities in addressing climate change?

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METHODOLOGY

The section that follows describes the methodology used in the present study in detail with description on sampling, data collection and data analysis process.

SAMPLING

This study employed a qualitative, exploratory research design to investigate how Gen Z at a public university in Malaysia perceive climate change. An exploratory approach was deemed appropriate given the relatively limited body of research on Gen Z climate perceptions specifically within the Malaysian context. The study involved 15 participants aged 20 to 22 years old, comprising six male and nine female students. This age range falls within the internationally recognized birth-year definition of Generation Z (Pew Research Center, 2019), which places the cohort's birth years between 1997 and 2012. It should be noted that falling within this age range establishes the participants' membership in the Gen Z cohort. It does not, on its own, establish that the sample is statistically representative of the broader, highly heterogeneous Malaysian Gen Z population. Therefore, in terms of eligibility, the sample represents the Gen Z demographic group. Given the exploratory and qualitative nature of this study, representativeness in the statistical sense was not the aim; rather, the study sought to generate insights into the participants' social representations on climate change in Malaysia, which is consistent with the aims of an exploratory qualitative research (Patton, 2015). The sample is ethnically composed of 12 Malay and 3 Chinese participants. The participants are enrolled in the same academic program at UKM, which contributed to a shared institutional context.

This study adhered to the ethical procedures for obtaining participant consent. Participants were recruited through voluntary sampling and were required to sign an informed consent form prior to data collection. The consent form outlined the study's purpose, procedures, confidentiality safeguards, and participants' right to withdraw at any stage without penalty (see Appendix A). Potential participants were invited to take part in the study by the lead researcher, who was their lecturer. This convenience sampling method was employed because the participants were easily accessible and were willing to contribute data. The researchers acknowledged that nonprobability sampling techniques like convenience sampling have limitations due to their subjective nature and are not necessarily representative of the population, but they are useful when the researcher has limited resources, time, or workforce, or when the research does not aim to generate results for population-wide generalization (Etikan et al., 2016). Additionally, this sampling method also concurs with Patton (2015) suggestions that non-random sampling is suitable in qualitative inquiry, particularly in exploratory studies whose primary aim is to generate insight data into an under-researched phenomenon rather than to support statistical generalization.

DATA COLLECTION: INTERVIEWS

Data for this study were collected through semi-structured interviews, designed to gain more insights into the participants' social representations on climate change. The interview questions comprised five questions, which were developed based on an existing instrument used in this study, which is a questionnaire. The lead researcher recognized that the lead researcher's dual role as the lecturer of the participants may introduce a potential biasness in answering the interview questions, which could give rise to social desirability bias, particularly given that the interview topics touched

on behaviours, which is social responsibility. To overcome this risk, the interviews were conducted by a lecturer with subject-matter expertise in Environmental Science affiliated with one of the Faculty's Center for Research. This step was intended to reduce the likelihood that the participants would feel compelled to provide socially desirable responses to their own lecturer, and to create a more neutral interview setting in which participants could speak candidly about their genuine perceptions and behaviours.

Data were collected through focus group interviews because focus group interview is deemed the best way to capture and generate discussion on climate change perceptions among participants who share a common academic and generational background. A total of three focus group sessions were conducted, with each group comprising five participants, resulting in a total sample of 15 participants. Each session lasted approximately 40 minutes and followed a semi-structured interview protocol, allowing the interviewer to explore emerging themes in greater depth. Interviews were held in the Active room within the interviewer's Center for Research. The interview dates and times were scheduled by the interviewer in coordination with the participants' availability, and sessions were conducted mainly in English. However, Bahasa Malaysia was sometimes used.

All sessions were audio-recorded using a digital voice recorder to ensure accurate data was captured for subsequent verbatim transcription. The recorder was placed discreetly within the room, out of the participants' sight, to minimize self-consciousness and to reduce the likelihood that awareness of being recorded would inhibit open discussion. Prior to each session, participants were reminded of the recording procedure and reaffirmed their consent to be recorded, consistent with the informed consent process described earlier. Each focus group was composed to allow for natural peer interaction, given the participants' shared program of study. During the interview, the interviewer remained attentive in ensuring that no single participant dominated the discussion (Krueger & Casey, 2015).

The participants were asked about their opinion on the state of climate change issues in Malaysia and their views on the causes of climate change. The participants were also asked about their knowledge on this environmental issue and their potential roles and responsibilities as members of Generation Z in addressing this global crisis. The interviews allowed for a rich exploration of their awareness and perceptions. By focusing on these specific questions, the study managed to capture data that complemented how Gen Z engages with climate change discourse. Broad transcription using basic notation symbols, such as accurate wording, with only minimal markers for long pauses *(...)*, laughter *[laughs],* or inaudible speech *[inaudible]* was applied. It is pertinent to point out that the present study is concerned with the semantic content of participants' talk rather than the interactional mechanics of the conversation, therefore, transcribing the interviews recording into a complete notation structure is unnecessary and will potentially disrupts coder consistency and focus.

RELIABILITY PROCESS

Two academics with expertise in qualitative analysis and discourse were appointed as independent coders to establish inter-rater reliability. The raters received a guide to conduct the analysis. Data analysis and coding training were conducted (refer to Appendix B and C). In instances where the two coders' interpretations diverged, discussion was held until a consensus was reached between them. Cohen's Kappa (1960) statistics ($k = (po-pe)/(1-pe)$) was utilised as the statistical measure for this assessment. In this context, "po" represent the relative observed agreement among raters,

while "pe" denotes the hypothetical probability of chance agreement (Bobbit, 2022). Two meetings were held to discuss the analysis. The first meeting took place two weeks after the inter-raters received the documents for analysis and the second meeting followed 10 days later. In the initial round, the inter-rater agreement value yielded a Kappa of 0.4973, indicating a moderate level of agreement, which was deemed unsatisfactory. Subsequently, the research team and raters held a discussion to address discrepancies and make necessary adjustments to the rating process using an updated guideline. As a result of these modifications, a final agreement value of Kappa 0.6660 was achieved, indicating substantial agreement.

DATA ANALYSIS

Data was analysed using the Social Representation Theory (SRT), proposed by Moscovici (1961, cited in Moscovici, 2008), focusing on how participants construct and share common-sense knowledge regarding climate change. This theory is appropriate in the present study because the participants are Gen Z, a generation whose climate understanding is substantially mediated through shared digital discourse and collective experience (Salguero et al., 2024) rather than formed in isolation.

To reiterate, the interview recordings were transcribed verbatim to preserve the accuracy and integrity of the participants' original wording. Following transcription, each transcript was read repeatedly, up to a maximum of four readings, to ensure thorough familiarity with the data prior to coding. This iterative reading process allowed the researchers to develop a better understanding of participants' narratives, including recurring patterns of expression.

INITIAL CODING PROCESS

The analysis then proceeded using a coding process, which serves as the preliminary stage of the qualitative inquiry. The process involved examining the raw data line-by-line to identify and label discrete units of meaning, without imposing predetermined categories on the data at this early stage (Strauss & Corbin, 1998). Each transcript was read closely, and segments of text that reflected the participants' perceptions, concerns, or experiences related to climate change were identified and assigned descriptive labels. This coding technique draws specifically on the open-coding procedures outlined in Charmaz's (2006) constructivist grounded theory approach. It is pertinent to point out here that the study adopted only Charmaz's open-coding procedures, rather than her constructivist grounded theory framework as the study's overall methodology. Consistent with Charmaz's emphasis on the researcher as an active participant in 'constructing' meaning rather than a detached, neutral observer, the coding process allowed initial categories to emerge inductively from the data before these categories were subsequently mapped onto the theoretical framework of Social Representations Theory (SRT). By using this flexible, iterative method, the analysis managed to capture the participants' opinions and views to answer the research questions.

For example, in response to being asked about their perception of climate change in Malaysia, one participant stated:

It's very serious. Malaysia often experiences sudden temperature changes during the dry season, irregular rainfall patterns in certain months, and an increase in natural disasters like floods and landslides.

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Each meaningful segment is assigned an initial descriptive label reflecting its content:

- *"It's very serious"* - labelled ‘severe perception’
- *"sudden temperature changes during the dry season"* - labelled 'change in temperature'
- *"irregular rainfall patterns in certain months"* - labelled 'hot weather'/’not normal rainfall patterns’
- *"increase in natural disasters like floods and landslides"* - labelled ‘natural disaster; flood and landslide’

This line-by-line labelling process was applied consistently across all the transcripts which generated an initial set of open codes.

SRT THEORY: ANCHORING AND OBJECTIFICATION CODING PROCESS

The analysis then proceeded to the next step, involving a more detailed, focused coding to map these concepts onto the two primary categories of SRT - anchoring and objectification. The steps are as follows:

Step 1: Climate change discourse. This refers to every participants’ responses to the interview questions.

Step 2: The Anchoring Phase - In the *anchoring* phase, the analysis focused on how the participants classified the unfamiliar, abstract concept of climate change into their existing social categories and value systems. Anchoring is not merely "relating new to old". Rather it is a classificatory act that conceptualizes the unfamiliar by assigning it a place within an existing structure. In the Malaysian context, this study operationalizes anchoring as the process by which Gen Z links, for example, the abstract global discourse of "climate change" to familiar, recurring environmental experiences, such as haze, feeling sick and extreme heat, thereby changing or converting a scientific concept into a locally tangible category of experience.

Step 3: The Objectification phase - While anchoring classifies, objectification concretizes. Abstract concepts are transformed into tangible, concrete representations that can be discussed, understood, and acted upon based on complex ideas. The transformation of complex ideas into concrete, visual or tangible forms involved metaphors, images and icons visualization or expressions. In this study, objectification is operationalised as the specific visual and narrative symbols through which Malaysian Gen Z renders climate change concrete and discussable, for instance, images of deforestation, land-clearing for housing or palm oil plantations, or flooded streets. The expression of these visual representations acts as powerful symbols, enabling people to see the impacts of climate change more clearly and prompting them to engage in discussions or actions related to environmental protection. These objectified images constitute the representation itself, functioning as the shared reference point that allows the concept to be socially communicated and collectively recognized.

Step 4: Social representation - The outcome of anchoring and objectification worked together as a social representation. This means a shared, socially negotiated system of values, images, and practices that a community uses to make sense of climate change and to orient its members' behavior toward it (Moscovici, 2008). In the present study, social representation is not treated as a final result. Instead, social representation is treated as the link that connects how people mentally

process climate change (through anchoring and objectification) to how they behave and feel about it afterwards (behavioral).

Step 5: Perceived responsibility/action - Once climate change is anchored and objectified, the analysis proceeded to the social responsibility stage. Social representation shapes how individuals attribute responsibility (to government, industry, or self) and their perceived ability or willingness to act. This final stage directly connects SRT to, for instance, why Malaysian Gen Z may report high awareness alongside constrained action.

RESULTS

RESEARCH QUESTION 1

Results for research question one clearly demonstrated that the participants' perceptions of climate change are embedded into their existing social and cognitive structures of anchoring and objectification. The participants anchored and objectified their perceptions entirely within their local experience of extreme weather in Malaysia, that is happening more often than in previous years.

Anchoring is a classificatory act that works by taking an unfamiliar concept and putting it into a pre-existing category or cognitive structure, so that the concept becomes familiar within an individual's existing worldview. For the anchoring category, climate change is perceived as *natural disasters* in excerpt 1 '*…an increase in natural disasters like floods and landslides'.* Similar perceptions are seen in Excerpts 3 (hot weather, flash flood and landslides), excerpt 4 (more floods, unpredictable weather). Additionally in all excerpts, climate change is anchored in the category of weather (rainfall, monsoon seasons) that classifies climate change as something that can be observed and experienced, rather than an abstract scientific concept or a global process.

Climate change is also anchored to the category of health in excerpt 2 – '*when the weather is hot, the heat is intense and can cause health issue'.* The participant not only anchored climate change within the weather category, but related it to illness, thereby increasing the seriousness of climate change situation. This example also depicted how anchoring operates in relation to two existing concepts simultaneously (health concern and geographic location). In excerpt 2, the participant also anchored climate change to specific locations — *"especially in city like Terengganu and Kelantan."* This is a classificatory act that moves climate change from the category of "global phenomenon" into the category of "regional or local occurrence," thereby relating it to places that the participant knows. This form of anchoring made the concept exist within an existing geographical map, rather than a global abstraction. The repeated phrase *"very serious"* in excerpts 1 and 4, assigned climate change to an evaluative category of *serious threats requiring concern*.

> Excerpt 1: We can see and feel climate change. It's *very serious*. Malaysia often experiences sudden temperature changes during the dry season, irregular rainfall patterns in certain months, and an increase in natural disasters like floods and landslides.

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> Excerpt 2: Climate change is like rising heat and extreme monsoon. For instance, when the weather is hot, the heat is intense and can cause health issue. The intense rainfall especially in city like Terengganu and Kelantan has caused flood.
>
> Excerpt 3: The weather has become very hot and unpredictable. Flash floods also seem to happen more often than before, with landslide happening here and there.
>
> Excerpt 4: It's *very serious*. We're seeing more floods, heatwaves and unpredictable weather that has affected many lives.

The interview excerpts (1, 2, 3, and 4) also indicate objectification category where the participants turned the concept of climate change into a tangible, perceptible image. The responses clearly indicated that the participants simplified the complex climate change phenomenon by defining it through specific, observable, and locally experienced manifestations. The results revealed two main categories of objectification - (1) natural disaster and (2) perceptual phenomenon. The participants define the reality of climate change by objectifying natural disasters into visible environmental disasters like "flood", "flash floods", "landslides" and "irregular rainfall patterns".

For perceptual phenomena category, the participants objectified it into "hot weather", "intense heat", "heatwaves" and "unpredictable weather". The participants used observable marker such as sudden temperature changes (hot weather, intense heat) and concrete sensory experiences to make sense and validate their claim (unpredictable weather, heatwaves). They also referred to tangible evidence of environmental harm and the physical danger associated with the environmental harm (flood, flash flood, landslides). The participants consistent responses on these specific images demonstrate how the participants transform the complex scientific concept of climate change into a concrete, lived experience that affects daily life.

The results also revealed that the participants translated the abstract discourse of climate change into concrete actions, or behaviors they could visibly see, physically enact, and directly attribute to environmental outcomes. The participants consistently objectified the concept through specific, tangible behavioral practices in their daily routines. In this sense, the complex scientific discourse surrounding climate change was reconstructed into a set of concrete actions that render the abstract concept observable and actionable.

This pattern is evident across excerpts five to seven. In Excerpt five, a participant stated: *"We can act. We can start by reducing single-use plastics, conserving electricity and water, and take parts in campaigns."* Here, the participant acknowledged the capacity to act ("we can act") to naming specific, physical behaviors, such as reducing plastic use, conserving resources, and joining campaigns. This pattern is reinforced in Excerpt six: *"I think we can make small changes in our lifestyle, like reducing the use of plastic such as straws and plastic bags, using less electricity and avoiding food waste by cooking or ordering only what's necessary."* Physical objects like straws, plastic bags, electricity use, food waste demonstrated the everyday items and habits that the participant views as tangible representation of environmentally responsible behavior. Excerpt seven illustrates another example of objectification category through the use of physical objects: *"We must do something like bring our own shopping bag to reduce plastic bags. We can also bring our own tumbler to buy drinks."*. The response objectified sustainability through physical objects, which include a reusable bag and a tumbler, that the participant can carry, hold, and use. This represents the most obvious example of objectification. The principle of "reducing plastic

consumption" is not discussed conceptually, but is instead objectified into two specific, material items that the participant personally uses.

> Excerpt 5: We can act. We can start by reducing single-use plastics, conserving electricity and water, and take parts in campaigns.
>
> Excerpt 6: I think we can make small changes in our lifestyle, like reducing the use of plastic such as straws and plastic bags, using less electricity and avoiding food waste by cooking or ordering only what's necessary.
>
> Excerpt 7: We must do something like bring our own shopping to reduce plastic bags. We can also bring our own tumbler to buy drinks.

Objectification of abstract idea is also shown in how Gen Z also objectified the abstract idea of spreading awareness through social media – *We can start by sharing reliable information on social media* (excerpt 8), *I think that by using social media platforms to promote climate change awareness is effective* (excerpt 9). This makes the digital platform the object through which the abstract climate change issue becomes more visible. The participants also objectified environmental concern by turning it into physical involvements such as "participating in environmental campaigns" (excerpt 8), "joining green projects" (excerpt 9) and "participating in activities related to climate change" (excerpt 9).

> Excerpt 8 : We can share information about climate change. We can start by sharing reliable information on social media and participating in environmental campaigns.
>
> Excerpt 9: I think by using social media platform to promote climate awareness. …Also, spreading awareness through social media and joining green projects
>
> Excerpt 10: As a student, I think that participating in activities that are related to climate change is important as it can help me know about climate change better

RESEARCH QUESTION TWO

The next section presents the results for research question on how social representations shape their perceived roles and responsibilities in addressing climate change. The results indicate that the participants anchor climate change into personal responsibility and individual accountability. Beyond anchoring and objectification of climate change to familiar seasonal patterns and locations, the participants also engaged in social responsibility. Rather than positioning themselves as passive bystanders to an abstract global phenomenon, the participants consistently attached their understanding of climate change to a specific, familiar reference point; their identity as members of a generation who are uniquely positioned and uniquely responsible to act. This links the unfamiliar concept of climate change to a familiar and self-referential category: participants' own peer group, generational identity, and everyday social practices. Gen Z do not view climate change as solely the government's responsibility or concern. Instead, they view it as a moral responsibility; "more aware", "responsible", "take actions" (excerpt 11) and "action matters" (excerpt 12). By

anchoring climate change into personal morality, the problem shifts from "environment" issue to "my responsibility" issue.

> Excerpt 11: I care about the environment. I feel like it's important to stay informed so I can be more aware and responsible with the actions I take. Like it or not, climate change is happening, and the only way for us to stop it from getting worse is to stay informed and take action.

> Excerpt 12: I read about climate change in social media, newspapers. My friends sometimes talk about climate when it is very hot. So, I do because I care about the environment"

The participants engagement with climate change is also attached to peer-level social interaction, as seen in Excerpt 12 - *"My friends talk about climate"*, where climate change is anchored to peer conversation. Similarly, in Excerpt 13, the social responsibility is anchored and objectified in their personal role in relation to the issue by stating, *"I can be more aware and responsible"*. Here, the participant located his own capacity for awareness and responsibility as a frame of reference for understanding the issue. In Excerpt 14, the participant extended social responsibility to a collective one - *"We should care and participate... participating in environmental campaigns"*. Here, the participant objectified climate change to a social responsibility of a shared, group-based obligation, viewing the issue through the lens of collective peer action. Finally, in Excerpt 15, *"I bring my own bag... creating collective change about the environment"* demonstrates how the participant mapped his social responsibility to environmental protection by performing familiar, everyday habit that the participant already does. In summary, Gen Z view themselves as a generation with social responsibility who are capable of raising awareness about climate change, thus, effectively shifting the role from passive observers to active participants.

> Excerpt 13: Climate change is serious. I can be more aware and responsible with the actions I take. Like it or not, climate change is happening, and the only way for us to stop it from getting worse is to stay informed and take action.

> Excerpt 14: We should care and participate. We can start small. We can start by sharing reliable information on social media, reducing single-use plastics, conserving electricity and water, and participating in environmental campaigns.

> Excerpt 15: Now more Malaysians know about climate change. I bring my own bag when I go shopping. Every small action matters when it comes to creating collective change about the environment.

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DISCUSSION

The findings indicate that a majority of participants classify climate change as a critical issue requiring urgent action, which is consistent with past studies (Scoville-Simonds, 2018; Tyson et al., 2021; Hickman et al., 2021; Coffey et al., 2021; Clayton et al., 2022; Reyes et al., 2026). The anchoring process observed in this study in which the participants linked the abstract concept of climate change to intensifying floods, landslides, and irregular rainfall relates specifically to Social Representation Theory (Moscovici, 2008), in a specific climate change context. The Malaysian participants in this study anchored their understanding to direct experience and recurring local climate change events (e.g., specific reference to Terengganu and Kelantan flooding) rather than to globally circulated climate images or scientific data. This is consistent with the 91.3% of Malaysian youth reporting direct experience of climate-related events in the UNDP/UNICEF Malaysia (2020) survey. The findings indicate that anchoring in this study functions as a process of labelling an already-lived reality or experience with the language of "climate change." This means that for people who are expose to and experience frequent climate change situations, the usual pattern of anchoring maybe reversed. Rather than starting from scientific explanations and working toward personal experience, as many of the existing research assumes, the Gen Z in the present study begins with what they directly see, feel and use to understand the broader concept of climate change.

Meanwhile, for the objectification category observed in this study, the participants translated and transformed the complex, scientific discourse of climate change into tangible, performable actions such as reducing plastic use, conserving electricity, and carrying reusable items. The actions align with SRT's account of objectification as a mechanism that "conventionalizes unfamiliar risks into specific forms that allow individuals to categorize and manage them" (Moscovici, 2008; Ross, 2019). Rather than talking about concepts like carbon footprints, Gen Z's objectification of climate change is portrayed in their individual practices of bringing their own bags and drinking tumbler, rather than on structured rules and regulations(e.g., government regulation, sustainability policies). This behaviour could be seen as a sign of personal agency, where people take constructive action in response to their concerns about climate change (Wamsler et al., 2020). Additionally, this pattern might actually reflect the individual's sense of responsibility or individual choices in handling large scale climate change crisis.

The findings also demonstrate that Gen Z in this study translated social representation of climate change by objectifying it primarily through personal habits that may indicate a form of empowered individual agency. This process aligns with past studies that reported how a layperson 'unpack' abstract scientific issues through related actions to make sense of environmental risk. The participants' social responsibility is also portrayed in their engagement with digital activism, where sharing climate-related content on social media functioned as an additional site of objectification that transforms global concern into a visible, publicly performed act (Salguero et al., 2024; Höijer, 2010). While this digital dimension extends prior objectification research by demonstrating how online platforms provide a further "object" through which abstract climate discourse is rendered concrete and shareable, it is pertinent to note that this behaviour may be interpreted as meaningful action towards contribution to climate action or a participation that merely satisfies a psychological need.

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CONCLUSION

The study highlights that this particular group of Gen Z's social representation of climate change in Malaysia is constructed through a dual process, which is locally grounded, direct-experience of anchoring, and individual practices of objectification. For the Gen Z participants in this study, climate change is not an abstract scientific topic. It is a situation that they see and feel around them. This is clearly depicted in how they connect climate change to unpredictable weather, intense heat, landslides, and flash floods that keep getting worse, as well as visible changes to the environment like deforestation and stripped hills. The Gen Z participants understand climate change through their own surroundings. When it comes to action, the participants do not dwell on scientific concepts like "carbon footprint". Instead, they focus on actions that are doable like reducing plastic use, using own shopping bags and saving energy. any also talk about using social media to spread awareness and nudge others toward more eco-friendly habits.

Furthermore, the Gen Z in this study use their digital literacy knowledge to raise public awareness about climate change via social media, thereby, transforming personal climate anxiety into collective awareness The actions demonstrate how the participants leverage on their social media consumption to encourage eco-friendly lifestyle among the public and spread awareness about climate change. By incorporating their environmental care into their daily habits and their online spaces, the Gen Z in the present study proves that the transition generation can contribute in a significant way to turn complex climate science discourse into real-world actions. Despite the positive findings about what the participants say they do or want to do, we want to point out that the present study did not examine whether these intentions actually hold up in practice, over time. The gap between intention and real behavior is something that future researchers can consider.

The application of SRT theory in the present study contributes to climate change discourse by demonstrating how these processes may operate differently in frequent, lived experience and exposure to climate change. A significant finding is that past studies using SRT theory assumes that people move from scientific facts towards personal experience. However, this group of Gen Z, who deal with climate impacts firsthand, it seems to work in the opposite direction. Their everyday experience comes first, and that is what gives the abstract idea of "climate change" its meaning. Practically, it suggests that climate message aimed at youth like this may materialize better when it starts from what is visible and is based on local experience, like floods, heat, landslides, rather than abstract scientific concepts. It also suggests that Gen Z, particularly the group examined in this study, given their media literacy with digital platforms, could be valuable partners to the government in translating climate change issues into messages that actually reach the public.

LIMITATION OF THE STUDY

While this study provides qualitative insights into how a group of Generation Z in the present study views the climate crisis, the study is not without limitations. The participants only consisted of fifteen subjects from a Center for Research affiliated to the Faculty of Social Sciences and Humanities, UKM. The participants share a highly specific educational and cultural environment, which means that their views may not fully represent the broader, more diverse population of Malaysian Gen Z. The sample had a noticeable skew towards female participants (six males and nine females). While this imbalance reflects the actual enrolment of the program and gender

differences were not a primary focus of this research, it is worth noting that climate anxiety and environmental concern can manifest differently across genders as reported in past studies (Clayton, 2021; Hickman, 2021; Reyes, 2026). A more balanced sample could have provided a broader range of perspectives.

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APPENDIX A

PARTICIPANT INFORMED CONSENT FORM

Research Title: The "Transition Generation": Gen Z's Perceptions toward Climate Change in Malaysia
Researcher's Name:
I, ……, IC No : ……..

- have read the information in the Participant Information Sheet including information regarding the risk in this study.
- have been given time to think about it and all of my questions have been answered to my satisfaction.
- understand that I may freely choose to withdraw from this study at anytime without reason and without repercussion
- understand that my anonymity will be ensured in the write-up.

I voluntarily agree to be part of this research study, to follow the study procedures, and to provide necessary information to the researchers or other research staff members, as requested.

……. ……..
(Signature) (Date)

……. Witness (if any) ……. (Signature) ……. (IC Number) ……..… (Date)	……. Researcher ……. (Signature) ……. (IC Number) ……. (Date)

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APPENDIX B

CODEBOOK GUIDE FOR INTER-RATER ANALYSIS

This codebook guide is intended to help coders identify and code instances of anchoring and objectification in the interview transcripts. Please read this guideline carefully before beginning, and refer back to it during coding whenever you are uncertain about a coding decision.

Step 1: Familiarize yourself with the study context and interview questions.
Before reading any transcript, review interview questions and the study's research objectives. It is important to interpret the participants' responses in context — for example, a response to "How would you describe climate change in Malaysia?" should be read differently than a response to a follow-up probe asking about personal experience.

Step 2: Read each transcript once, in full, without coding.
Read the entire transcript first to get a general sense of the participant's overall narrative and Do not attempt to code at this stage because the purpose of to familiarise yourself, not analysis.

Step 3: Re-read the transcript closely, (suggestion: 3–4 times)
On subsequent readings, you can start making notes about statements that can be mapped onto Anchoring and Objectification category. Continue re-reading until you feel you have a clear grasp of how the participant feels about climate change

Step 4: Apply the code definitions (refer to the examples) to identify anchoring and objectification categories.
Use the following code definitions to identify and label excerpts. Copy the relevant excerpt, the code applied, and a brief justification into the coding table.

Code Definitions and Examples

Anchoring:
Anchoring codes is defined as instances where participants linked the abstract concept of climate change to something familiar to them, for example, a known local weather pattern, season, place, personal memory, or comparison to a remembered past state. Anchoring is the process of *classifying* the unfamiliar by connecting it to an existing category of knowledge or experience the unfamiliar by connecting it to an existing category of knowledge or experience. Look for language that ties climate change to a known reference point (a season, a location, a routine, a "before/after" comparison).

Inclusion criteria — code as anchoring when the participant:

- Names a specific season or recurring climatic pattern (e.g., "dry season," "monsoon", "heavy rain")
- Make references a specific, familiar location (e.g., "Kelantan", "Terengganu", or region they know)

- Makes a temporal or comparative reference (e.g., "more than before," "used to be different", “not like before”)
- Draws on personal or routine experience to make sense of the concept (e.g., “I sweat more”, “suddenly heavy rain”, “I use umbrella now”)

Exclusion criteria — do NOT code as anchoring when:

- The statement is a general/abstract claim with no reference point (e.g., "climate change is a global crisis" — too abstract, no anchoring reference)

Example of excerpts:
"Rising heat and extreme monsoon. When the weather is hot, the heat is intense and can cause health issue. The intense rainfall in Terengganu and Kelantan caused flood."
Anchoring elements: *"monsoon"* (a familiar seasonal category) and *"Terengganu and Kelantan"* (familiar, named local places). These ground the abstract concept of climate change in locally recognizable categories.

Objectification
Objectification code is defined as instances where participants translated this anchored concept into something concrete, perceptible or tangible image, event, or consequence (e.g., naming a specific disaster type, describing a physical or health impact, or referencing a particular place). Objectification is the process of turning an abstract idea into a "figurative element": something that can be pointed to, described, or pictured. Events or tangible consequences (disasters, physical symptoms, visible damage) are identified as objectification.

Inclusion criteria — code as objectification when the participant:

- Names a specific type of disaster or event (e.g., "floods" "landslide”)
- Describes a physical, health-related, or embodied consequence (e.g., "cause health issue," "people get sick easy”)
- Refers to a visible or describable image of environmental impact (e.g., “damaged crops”, “sunken roads”, “fallen trees when heavy rains”)

Exclusion criteria — do NOT code as objectification when:

- The participant only expresses a general feeling or evaluation without naming a concrete event (e.g., "it's very serious" — this is an evaluative statement, not objectification, unless it directly accompanies a particular event within the same excerpt)
- The statement remains at the level of an abstract category (e.g., "weather patterns" alone, without naming a specific event, is closer to anchoring than objectification)

Example of excerpt:
Malaysia often experiences sudden temperature changes during the dry season, irregular rainfall patterns in certain months, and an increase in natural disasters like floods and landslides.
When the weather is hot, the heat is intense and can cause health issue. People get sick easy.
Objectification elements: *"can cause health issue"* (a concrete embodied consequence) and *"has caused flood"* (a specific, nameable event). These make the abstract concept tangible.

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Step 5: Handling excerpts that contain both codes, or borderline cases.
There maybe excerpts that contain both an anchoring element and an objectification element in the same sentence. In such cases, code both elements separately within the same excerpt, clearly marking which portion of the text corresponds to which code.
If you are uncertain whether an excerpt qualifies as anchoring, objectification, both, or neither, do not skip it — flag it in the "Notes/Uncertainty" column of the coding table with a brief explanation of your uncertainty. Flagged excerpts will be discussed during the inter-rater consensus meeting.

Step 6: Complete the coding table. For each identified excerpt, record: (a) the participant ID, (b) the verbatim excerpt, (c) the code(s) applied (anchoring and/or objectification), and (d) a one-sentence justification referencing the inclusion criteria above. A template is provided in the attached document.

Step 7: Submit your completed coding table independently.
Complete your coding independently, without consulting the other coder, and submit your table by the agreed deadline. Independent coding is essential to the validity of the inter-rater reliability process — please do not discuss specific excerpts with the other coder until after both tables have been submitted.

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APPENDIX C

CODING TABLE

Interview question:

What is your definition of climate change?

No	Participant coding	Verbatim excerpt	Code: Anchoring	Code: Objectification	Notes/ Uncertain
1	P01	It's very serious. Malaysia often experiences sudden temperature changes during the dry season, irregular rainfall patterns in certain months, and an increase in natural disasters like floods and landslides	"dry season" and "certain months" (named a specific season/climate change)	objectified via "floods and landslides" (tangible, disaster events	
2	P02	Rising heat and extreme monsoon. For instance, when the weather is hot, the heat is intense and can cause health issue. The intense rainfall especially in city like Terengganu and Kelantan has caused flood	"extreme monsoon" (seasonal category) "Terengganu and Kelantan" (familiar named locations)	Can cause health issue (described health related consequence) Refers to describable image (has caused flood)	

ABOUT THE AUTHORS

Nor Fariza Mohd Nor (PhD), is a Professor in Language, Literacy and Culture at the Centre for Research in Language and Linguistics, Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia (UKM). Her area of interests includes critical discourse analysis, corpus assisted discourse linguistics and media linguistics. She can be contacted at nfarizamohd@gmail.com

Azlina Abdullah (PhD), is an Associate Professor and Assistant Dean (Quality and Strategy) at the Faculty of Social Sciences and Humanities, UKM. Her research interests encompass ethnic sociology, deviance, women and the family, adolescents and youth, as well as urban and rural community studies. Her research and publication collaborations include researchers from universities, industries and stakeholders span across multiple disciplines.
Intan Safinaz Zainudin is a senior lecturer at the Centre for Research in Language and Linguistics, Universiti Kebangsaan Malaysia. Her areas of interest include translation profession, corpus-based translation studies and bilingual lexicography.

Jamaluddin Aziz (PhD), is an Associate Professor in Critical Media Studies, at the Centre for Research in Media and Communication, FSSK, UKM. His areas of expertise include gender, media, discourse, literary studies, visual culture, cultural & critical theories, digital humanities and environmental humanities. He can be contacted at jaywalk@ukm.edu.my

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