

Beyond the Emergency Kit: Risk Perception, Trust, and Crisis Preparedness in the Netherlands in the case of the “Denk Vooruit” Campaign

Isa Schuit

560545

Erasmus University Rotterdam

Public Governance, Management and Policy

1st reader: Vincent Homburg

2nd reader: Rebecca Moody

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Preface

The idea for this thesis emerged amidst a period of turbulence in society, when crises, war and uncertainties increasingly filled the public sphere. I was struck by the apparent indifference of those around me toward crisis preparedness, because the likelihood of emergencies seemed increasingly pressing. It was particularly telling that hardly anyone I spoke with had heard of the Dutch government's Denk Vooruit ("Think Ahead") campaign, an initiative intended to encourage citizens to prepare for disasters. Few, if any, had taken the basic step of assembling an emergency kit at home. This disconnect between the growing risks and the lack of public awareness and action sparked my curiosity to undertake this research on all-hazard crisis preparedness in the Netherlands. In that sense, the following work is rooted in a personal concern: why do vital preparedness messages fail to reach people, and how might understanding the psychological and informational factors at play help bridge this gap?

Conducting the study proved to be as enlightening as it was challenging. One early hurdle was the recruitment of older participants for the research. Despite all efforts, engaging members of the older generation was more difficult than anticipated; their voices are crucial to my study, yet reaching them required persistence and creativity. Equally striking was the low public awareness regarding the "Denk Vooruit" campaign itself. Many potential respondents across various ages were hearing about the campaign for the first time when I approached them. That such an official governmental preparedness initiative could fly under the radar for so many people was surprising and concerning. This reality validated the central premise of my thesis and reinforced the importance of the questions driving it. The challenges, like the practical difficulties of data collection and the unexpected gaps in awareness, ultimately deepened my understanding of the issues I set out to explore. They turned obstacles into insights and made the research journey meaningful.

Throughout this process, I have been fortunate not to stand alone. I wish to express my sincere gratitude to my thesis supervisor, Dr. Vincent Homburg, for his extensive support and guidance. His involvement at every stage, from shaping the initial research design to refining the final arguments, has been very valuable. He consistently provided timely, insightful, and rigorous feedback that pushed the work to a higher standard while respecting my ideas and questions. His comments were clear, detailed, and never vague, making them very constructive. By offering concrete examples, sharing relevant literature, and subtly suggesting alternative directions without prescribing solutions, he encouraged fresh thinking while allowing me to retain ownership of the project. Notably, Dr. Homburg fostered a sense

of collaboration in the thesis group sessions, which kept me from ever feeling isolated during this stressful period. His encouragement and dedication gave me optimistic hope in even the most challenging moments of this thesis project; I am deeply thankful for that.

I would also like to thank Anna Kohoutova for her collaboration on the SPSS outputs and helpful discussions during the data analysis process. Her analytical input and willingness to think along were greatly appreciated during the more technical stages of this project.

As I conclude this preface, I look back with appreciation and forward with curiosity. Completing this thesis has not only been the fulfillment of an academic pursuit but also a personal exploration into a subject that I believe has significant societal relevance. I invite you, the reader, to view the work that follows not just as a product of rigorous research, but as a step toward greater awareness and dialogue about crisis preparedness. In that spirit, I hope this thesis serves not only as the culmination of my efforts, but also as a steppingstone toward a deeper societal understanding of preparedness; a beginning for further questions and collective reflection on how we can better prepare for the uncertainties that lie ahead. The results of this thesis are shared with the Nationaal Coördinator Terrorismedebestrijding en Veiligheid (NCTV), so they can take this into account for future references.

Abstract

As modern societies face a growing array of crises, from climate-related disasters to cyber threats, governments increasingly call on citizens to take proactive steps toward personal preparedness. This thesis investigates the psychological and informational factors influencing all-hazard preparedness behavior in the Netherlands, using the government's "Denk Vooruit" campaign as a focal case. While previous studies often focus on single-hazard contexts, this study adopts a broader lens, integrating insights from Protection Motivation Theory and risk communication research. A quantitative survey (n=603) assessed the effects of Risk Perception, Efficacy Beliefs, Trust in Government, and Campaign Awareness on self-reported preparedness behaviors. Regression analyses showed that efficacy beliefs, particularly self-efficacy, were the strongest predictors of preparedness, affirming the Protection Motivation Theory theoretical framework. Campaign awareness also had a significant positive effect. Contrary to expectations, risk perception and trust in government did not significantly predict preparedness behavior. These null findings challenge widely accepted assumptions and suggest that in high-trust, institutionalized settings, emotional salience and perceived personal capability may matter more than abstract threat evaluations or generalized trust. Qualitative insights further revealed practical and psychological barriers to preparedness, including low campaign recognition, financial constraints, emotional fatigue, and limited relevance of official messaging. Participants voiced a need for more tailored communication, mental readiness support, and equitable policy tools, such as subsidized emergency kits or preparedness courses. This study contributes to the (Public Administration) literature by refining existing models of risk behavior and extending them into a generalized, multi-hazard context. The findings underscore the need for crisis communication strategies that are not only factually informative but also emotionally engaging and behaviorally actionable. By emphasizing empowerment and awareness instead of fear or trust in government, this thesis provides guidance on how to create better public preparedness campaigns in the Netherlands and beyond.

1. Introduction

In recent years, rising geopolitical tensions (e.g., conflict in Ukraine) and potential domestic crises, ranging from long-term power outages and cyberattacks to extreme weather events, have made it evident that public readiness is essential in the Netherlands. A key governmental effort in this realm is the ‘Denk Vooruit’ campaign, re-launched in phases from 2024 to early 2025 (*Denk Vooruit Campagne Weer van Start! -VRMWB, n.d.*). This initiative encourages citizens to discuss preparedness with neighbors and family, assemble basic emergency kits (*noodpakketten*), and stay informed through official channels. Yet, despite its clear objectives, the campaign’s actual impact remains uncertain.

Extant research on risk perception (e.g., Kievik & Gutteling, 2011) and protective motivation (Witte & Allen, 2000) shows that perceived threat and beliefs about one’s own capabilities (efficacy) are influential in fostering self-protective actions. However, it remains uncertain how these constructs operate when multiple threat scenarios are grouped under one nationwide campaign.

Moreover, existing studies often examine crisis preparedness in isolated contexts (e.g., flood preparedness or earthquake readiness) rather than as part of a broader national strategy (Terpstra, 2010), making it difficult to assess the holistic impact of a multi-hazard preparedness campaign like ‘Denk Vooruit.’

According to the Nationaal Coördinator Terrorismebestrijding en Veiligheid (NCTV), the Netherlands is a “vulnerable country,” where societal “*schokbestendigheid*” (shock resilience) could be much stronger (NOS, 2022). While a household emergency kit may offer short-term help, it is questioned whether simply gathering supplies risks creating a “false sense of security.” SCP-director Karen van Oudenhoven (Ministerie van Volksgezondheid, Welzijn en Sport, 2025) contends that genuine resilience also hinges on stronger, more inclusive communities. In other words, stepping beyond individual preparations, such as bottled water and battery-powered radios, and fostering inter-group trust is critical for coping effectively with unanticipated disruptions. Similarly, researchers at TNO note that earlier iterations of ‘Denk Vooruit’ often relied too heavily on rational appeals (“buy a kit now”) rather than engaging deeper social and intuitive drivers of behavior (Kerstholt, 2014).

While several studies (Kievik & Gutteling, 2011; Terpstra, 2010; Han et al., 2016; Bronfman et al., 2015; Qiu et al., 2023) examine single-hazard preparedness or isolate constructs such as trust or efficacy, few have integrated these variables into a cohesive model tested in the context of a multi-hazard national campaign like ‘Denk Vooruit.’

Despite these concerns, many citizens do heed the campaign's calls. Some stockpile essential items and actively coordinate with neighbors to exchange information and discuss contingency plans (Veiligheidsregio Midden- en West-Brabant, 2025). Others remain skeptical or admit to overlooking preparedness altogether. This divergence in responses underscores a gap in understanding of how 'Denk Vooruit' interacts with factors like risk perception, trust in government, and social connectedness: why do some individuals readily engage in crisis preparedness while others remain indifferent?

1.1 Problem Statement and Research Goal

Moreover, previously mentioned studies have not fully explored how trust in government, exposure to risk communication, and social norms interact to shape preparedness behaviors in the Dutch context. Given the mixed public responses to 'Denk Vooruit', it is necessary to investigate which factors most strongly influence Dutch citizens' engagement with crisis preparedness efforts (Kievik & Gutteling, 2011).

This study contributes to the academic debate on how psychological and informational factors jointly influence citizen preparedness in the Netherlands, where institutional trust and individual responsibility are key themes. It serves a dual purpose: to test theoretical predictions about crisis preparedness behavior and to evaluate the real-world implications of the 'Denk Vooruit' campaign.

1.2 A by B

The research objective of this study is to identify the key determinants of crisis preparedness behaviors and the impact of government communication in the Netherlands, by confronting hypotheses derived from theories on risk perception, trust in government, social influence, and efficacy beliefs with data gathered in a survey among Dutch adults.

By integrating multiple theoretical perspectives, this study contributes to crisis communication theory and public (preparedness) policy. It aims to generate actionable insights for policymakers to refine public awareness campaigns and improve risk messaging strategies.

1.3 Research Question:

To achieve this goal, the following research questions will be addressed:
What variables are associated with individuals' crisis preparedness as communicated in the Dutch 'Denk Vooruit' campaign?

Several subquestions are formulated to guide the line of reasoning that leads to answering the main research question. As this study aims to test hypotheses using survey data collected from Dutch adults, it is essential to derive these hypotheses from reviewing the relevant literature. The first subquestion, therefore, is: *What variables that impact crisis preparedness are suggested in the academic crisis response and government crisis communication literatures and what specific hypotheses can be developed?*

To test the hypotheses, they are confronted with empirical survey data. The second subquestion, therefore, is formulated as follows: *What conclusions can be drawn after having confronted hypotheses with empirical data?*

The results of the hypothesis testing are used to reflect on the existing literature on crisis communication and crisis mitigation and to inform the development of policy recommendations. Therefore, the third subquestion is: *What theoretical and policy-relevant statements can be developed from the testing of hypotheses?*

1.4 Relevance and Academic Contribution

Understanding the psychological and informational dynamics of crisis preparedness is key to improving risk communication and Dutch citizens' readiness in a volatile world. While Dutch authorities emphasize individual preparedness, such as assembling emergency kits or storing water, experts like Van Oudenhoven (Ministerie van Volksgezondheid, Welzijn en Sport, 2025) highlight the importance of collective resilience. This study identifies key behavioral drivers, offering insights for policymakers and contributing to academic debates on risk perception, institutional trust, and protective motivation.

Importantly, this is not merely a study in communication science; it is firmly rooted in public administration. By examining how the Dutch government attempts to mobilize individual responsibility through state-led messaging, this thesis engages with questions of public safety governance, the legitimacy of administrative action, and the dynamics of public trust under uncertainty.

In the tradition of Boin et al. (2017), who emphasize the political dimensions of meaning-making during crises, this research explores how governments seek to steer citizen behavior through communication. Meaning-making, as Boin et al. (2017, p.79) define it, is "the attempt to reduce public and political uncertainty and inspire confidence in crisis leaders by formulating and imposing a convincing narrative." This process occurs within a triangular relationship between political actors, the mass media, and the citizenry (Boin et al., 2017, p.81). By identifying how risk perception, institutional trust, and campaign exposure shape

preparedness behavior, this thesis offers empirical insight that can inform future meaning-making strategies.

This thesis also aligns with PA scholar Braams' (2023) call for a transformative approach to public governance that emphasizes co-production, empowerment, and the psychological dimensions of policy engagement. Braams argues that public institutions must move beyond top-down risk management toward fostering active citizenship through trust-based and emotionally intelligent communication. By focusing on how citizens interpret and act upon preparedness messaging, this thesis adds to Braams' ideas of a responsive, participatory administrative state that communicates risk and cultivates readiness through engagement, meaning-making, and psychological alignment.

The urgency of these insights is heightened by geopolitical uncertainty. Dutch institutions such as ProRail and the national police have recently activated contingency planning in response to increasing war anxiety (Snijders & Loupatty, 2025), while Prime Minister Schoof reassures citizens that NATO's framework offers sufficient protection against direct conflict (NOS Jeugdjournaal, 2025). This conflict between being prepared and feeling safe is central to the public discussion about the 'Denk Vooruit' campaign and its perceived legitimacy. While preparedness efforts can enhance resilience, they also fuel unnecessary anxiety. Thus, clear and evidence-based communication is needed to balance motivating action and avoiding public panic.

Moreover, this thesis fills a gap in the crisis preparedness literature by exploring the underexamined intersection of psychological and informational drivers in a national, multi-hazard context. While foundational studies emphasize the role of perceived threat and self-efficacy in shaping protective behaviors (Witte & Allen, 2000; Kievik & Gutteling, 2011), most focus on isolated risks like floods or earthquakes (Terpstra, 2010; Najafi et al., 2017). This fragmented approach risks overlooking how people prioritize, interpret, or respond to overlapping hazards within a single preparedness campaign like 'Denk Vooruit'. In contrast, this study applies Protection Motivation Theory (PMT) to the broader, government-led 'Denk Vooruit' campaign, integrating threat and coping appraisals into a cohesive framework (Rogers, 1975; Lahiri et al., 2021). Recent research supports this integrated approach, finding that while risk perception does predict preparedness intention, its effect is moderated by factors such as trust in government and campaign awareness (Cisternas et al., 2024).

This thesis also contributes to ongoing academic debates on the dual role of institutional trust. Although traditionally seen as a facilitator of compliance (Paton, 2007; Bronfman et al., 2016), high trust in governments can also suppress personal responsibility,

referred to as the “delegation effect” (Han et al., 2017; Dong et al., 2024). By explicitly testing for non-linear trust effects, this study deepens understanding of how institutional trust can encourage and discourage preparedness behavior. Finally, it contributes to literature on effective risk communication, emphasizing message clarity, emotional resonance, and messenger credibility (Kerstholt, 2014; Seeger et al., 2018). Strong communication paired with public trust has been shown to significantly increase protective actions (Gu et al., 2022).

By evaluating how exposure to ‘Denk Vooruit’ shapes perceived risk, trust, and behavior, this research advances theoretical and empirical debates on resilience-building in modern societies. The findings are relevant to Dutch crisis policy and other Western democracies grappling with the challenge of promoting self-reliance without provoking fear or dependency.

2. Theoretical Background

This chapter answers sub-question one by reviewing theoretical concepts and insights from the existing literature to explain how this study's hypotheses were formed and how it contributes to current research on crisis preparedness. It addresses academic and societal relevance, clarifying how the findings not only inform Dutch crisis communication policy but can also contribute to international research and debate on risk perception, public trust, and protective behavior. The chapter ends with a conceptual model of the hypothesized relationships.

2.1 Review Strategy and Model

To ensure a comprehensive and relevant literature review, a structured search was conducted using Google Scholar as the primary database. The search strategy involved key terms related to crisis preparedness, risk perception, and government communication. Specifically, the keywords used included: "crisis preparedness" AND "risk perception" OR "protective motivation theory" OR "trust in government" OR "public communication" AND "Netherlands." The search was restricted to peer-reviewed journal articles, books, and reports to ensure the inclusion of recent and relevant studies. Studies on emergency preparedness, government risk communication, and behavioral responses to crisis warnings were prioritized. The filter of "show most relevant first" was on, so that the most cited/relevant articles got priority.

The initial search had more than 319 results. To reduce the selection, abstracts were screened to check relevance to the research question, leading to the exclusion of articles that did not address crisis preparedness, risk communication, or public response dynamics. When an interesting article was found, more articles with the same variables were looked up to see whether other research confirmed or denied claims made by the former author. Additional exclusion criteria included non-English publications and studies without empirical or theoretical contributions. Ultimately, 25 key sources were selected for inclusion in the review, as visualized in Figure 2. Of these, the majority (over 75%) used quantitative methods (surveys or experiments), with a few mixed-methods and qualitative contributions. The most common theories were Protection Motivation Theory (PMT, $n = 5$), Theory of Planned Behavior (TPB, $n = 2$), and Trust and Risk Communication frameworks ($n = 4$). To summarize and integrate findings, a literature table is included (Appendix A), including variables, methods, country contexts, and theoretical contributions.

This review revealed that risk perception (used in 9 studies), efficacy beliefs (4), and trust in government (6) were the most frequently analyzed predictors of preparedness. Variables like social norms and benevolence were present in fewer studies (under three each) and showed more mixed or context-dependent effects. Based on this prevalence and effect strength, risk perception, efficacy beliefs, trust, and campaign awareness were selected for the final model. These variables were either repeatedly supported by meta-analyses (e.g., Witte & Allen, 2000) or proposed for future research in relevant national contexts (e.g., Dong et al., 2024; Haunschild et al., 2024). Social influence and benevolence were excluded due to inconsistent predictive power and reduced alignment with the ‘Denk Vooruit’ campaign's emphasis on individual preparedness.

This evidence-driven approach ensures that the theoretical framework is academically rigorous and methodologically justified, in line with best practices for literature reviews (Boote & Beile, 2005). Moreover, by synthesizing international studies across democratic societies (including the Netherlands, Germany, China, and the U.S.) this review positions the research within global academic debates on how cognitive, emotional, and institutional factors drive preparedness behavior.

Figure 1 shows a rise in studies after 2020, reflecting increased academic focus on crisis preparedness amid COVID-19 and global instability.

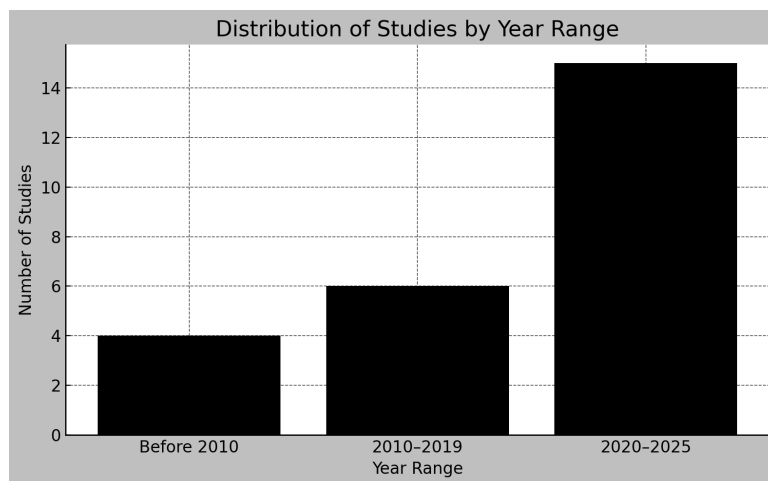
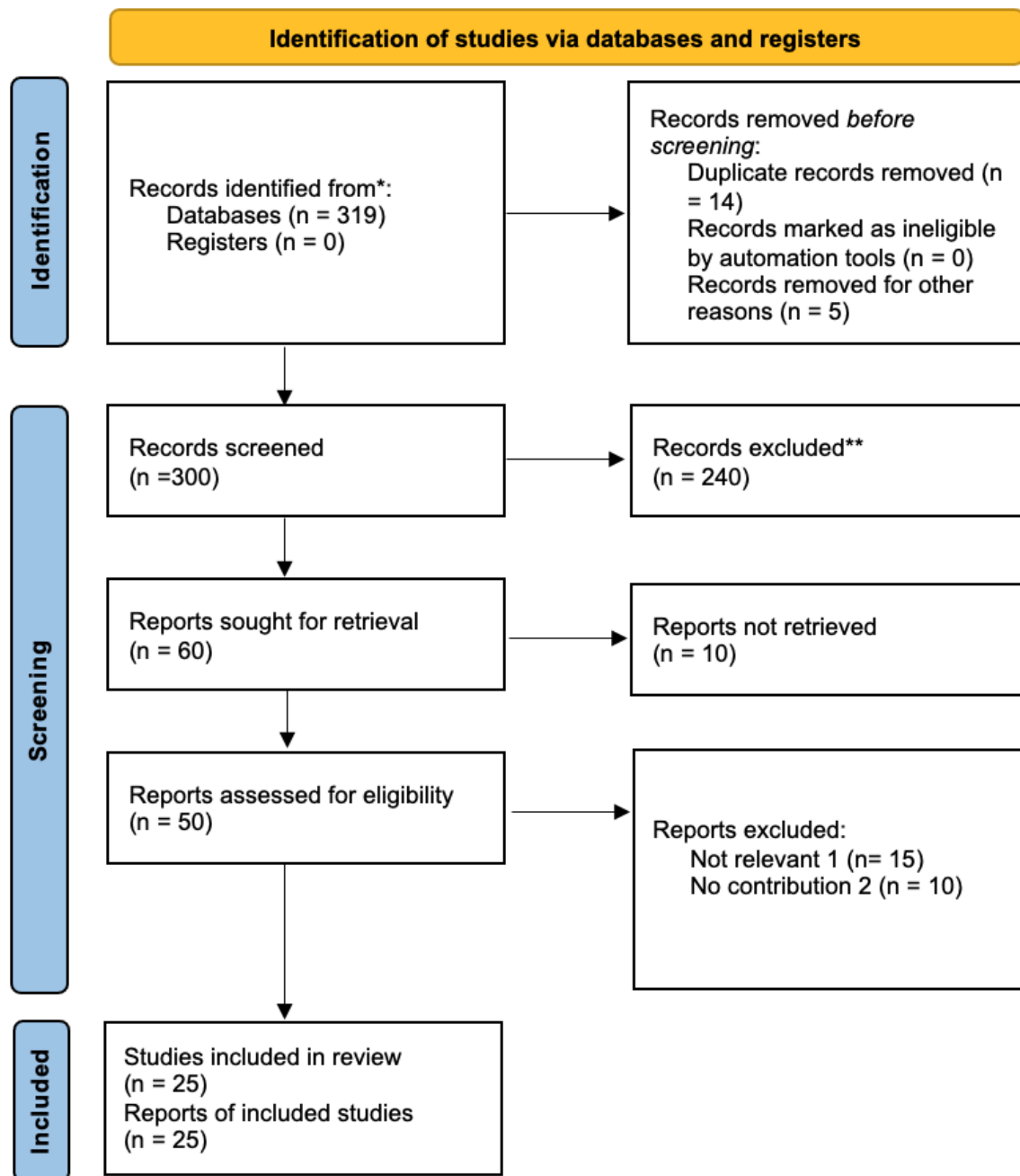


Figure 1. Distribution of studies by year range



*=Google Scholar is used as database

**=No automation tools were used

Figure 2. PRISMA 2020 flow diagram illustrating the selection process of included studies.

2.2 Risk Perception and Crisis Preparedness

Risk perception plays a role in adoption of self-protective measures when confronted with potential crises such as prolonged power outages or cyberattacks (Slovic, 2016). Within the context of the 'Denk Vooruit' campaign, this concept encompasses assessments of

probability (e.g., “Is a cyberattack likely to happen here?”) and severity (e.g., “How serious would a flood be for my neighborhood?”) of various hazards (Wilson et al., 2018).

Traditionally, a high perceived threat level (whether due to high probability, severe consequences, or both) correlates with increased willingness to prepare (e.g., assembling *noodpakketten* or coordinating evacuation plans) (Kievik & Gutteling, 2011).

However, risk perception is not purely cognitive: affect (emotion) strongly influences judgments about hazard likelihood and impact (Slovic & Peters, 2006).

Cultural factors also shape risk perception, as values, traditions, and collective memory influence preparedness behaviors (Appleby-Arnold et al., 2021). In multicultural societies, fostering a shared culture of preparedness is complex, yet community cohesion and social norms play a significant role in shaping risk-related attitudes.

According to Slovic and Peters (2006, p.322), early research demonstrated that “feelings of dread were the major determiner of public perception and acceptance of risk for a wide range of hazards”. They note that this explains, for example, why the public sees radiation exposure from nuclear power plants (highly dreaded) as far riskier than radiation from medical X-rays: an assessment not shared by risk experts. In today's world, terrorism has replaced nuclear power at the top of the list of widely dreaded risks (Slovic and Peters, 2006), this shift reflects evolving emotional associations with modern threats rather than changes in statistical likelihood.

Moreover, risk perception is increasingly recognized as multidimensional. Wilson et al. (2018) propose that individuals consider not just severity and probability, but also personal vulnerability, affective responses, and potential benefits (if any) related to the risky activity or hazard. Their findings imply that a one-size-fits-all approach, focusing solely on numeric probabilities or abstract severity, may fail to capture the complex ways people interpret threats.

Given these complexities, government communications that effectively convey specific threats (Veiligheidsregio Midden- en West-Brabant, 2025), recognize diverse emotional responses and highlight relevant protective actions could be more likely to spur public preparedness. Conversely, if a person finds a scenario too improbable or if individuals trust the government to manage emergencies, their risk perception may remain low, reducing their motivation to take proactive measures (Paton, 2007). Balancing factual information (e.g., hazard likelihood) with attention to emotional resonance (i.e., making the consequences salient and personally relevant) is needed to ensure that campaigns like ‘*Denk Vooruit*’ can encourage good preparedness behaviors.

Distrust in institutions may lead individuals to distrust official warnings or reject government preparedness guidance (Haunschild et al., 2024), making it extra important that government crisis communication strategies convey risk probabilities and address emotional responses and misinformation to maximize public engagement. If citizens trust that the government will manage a crisis effectively, their motivation to prepare may decrease, highlighting a critical interaction between risk perception and trust in government (Haunschild et al., 2024), explained later in this chapter.

2.3 Efficacy Beliefs and Protective Motivation Theory (PMT)

Protective Motivation Theory (PMT) provides a lens to understand how individuals' preparedness behaviors arise (Rogers, 1975; Witte & Allen, 2000; Lahiri et al., 2021). According to PMT, protective actions (e.g., gathering supplies, formulating a family emergency plan) depend on two cognitive appraisals:

1. Threat Appraisal: Individuals assess the seriousness and personal relevance of the threat, forming a sense of vulnerability (Kievik & Gutteling, 2011).
2. Coping Appraisal: Individuals evaluate whether the recommended response is effective (*response efficacy*) and whether they can successfully execute it (*self-efficacy*).

In the Dutch crisis-preparedness context, *threat appraisal* aligns with how citizens perceive risks such as cyberattacks or flooding, while *coping appraisal* depends on whether they believe actions like stocking food and water or learning first-aid skills will genuinely help them cope (Witte & Allen, 2000). If people deem these measures straightforward and their ability sufficient, their sense of self-efficacy is bolstered (Kerstholt, 2014). Moreover, studies emphasize that cultural familiarity and integration into daily routines can improve efficacy beliefs, as seen in community-driven preparedness strategies in Portugal and the Netherlands (Appleby-Arnold et al., 2021). Conversely, low self-efficacy may lead to inaction even if the perceived threat is high.

2.4 Trust in Government

Trust in government significantly shapes how individuals respond to official risk communication (Poortinga & Pidgeon, 2003). In many cases, people who have high trust in authorities are more likely to follow governmental advice like assembling emergency kits, sharing resources with neighbors, or staying informed through official channels (Kievik & Gutteling, 2011). On the other hand, skepticism about governmental competence or motives

can undermine compliance, leading citizens to question whether ‘Denk Vooruit’ guidance is necessary or even credible (NOS, 2022).

Recent findings (Haunschild et al., 2024) suggest a paradox: individuals who place too much trust in government may become less likely to prepare, assuming that official institutions will handle emergencies on their behalf. Similarly, Dong et al. (2024) found that high trust in public flood protection agencies can suppress personal preparedness by creating a “delegation effect,” where individuals assume that authorities will fully manage disaster response. This aligns with research on the “safety paradox,” where excessive reliance on government efforts reduces personal initiative in crisis preparedness (Grothmann & Reusswig, 2006). Additionally, research shows that in some state-oriented risk cultures, citizens expect the government to take full responsibility for disaster management, reducing personal preparedness motivation (Appleby-Arnold et al., 2021).

Wiese and Van Der Westhuizen (2023) examined public responses to government-mandated COVID-19 restrictions. Their study revealed that when individuals feel powerless due to lockdowns, their quality-of-life decreases, leading to crisis coping strategies like seeking support, sharing information, or engaging in negative word-of-mouth. A lack of trust increases feelings of alienation, which, in turn, contributes to lower compliance with public health measures. Conversely, when trust in government remains strong, people are more inclined to adopt constructive coping mechanisms that align with official crisis communication. The findings suggest that when governments engage in transparent, empathetic, and participatory communication strategies, it reduces public alienation and promotes preparedness.

Dong et al. (2024) also found that trust in public institutions indirectly influences preparedness through risk perception. When trust prompts individuals to recognize the severity of risks, rather than simply relying on authorities, it can foster more proactive preparedness behaviors. This indicates that efforts to build trust should be paired with communication strategies emphasizing personal responsibility instead of passive reliance.

Drawing on Dutch data, Van Oudenhoven (2025) contends that while individual preparedness is crucial, governments must foster socially inclusive strategies to seek sustained public cooperation (Ministerie van Volksgezondheid, Welzijn en Sport, 2025). This means that promoting trust and fairness can boost the impact of risk communication, especially during volatile or uncertain times (Earle & Siegrist, 2008).

2.5 Campaign Awareness and Information Exposure

In addition to trust, citizens' awareness of and exposure to official risk messages shape their perceived need to act and their sense of efficacy (Seeger et al., 2018). 'Denk Vooruit' communicates through various channels (websites, social media, informational brochures), aiming to make the population aware of potential crises and recommend actionable preparedness steps (Veiligheidsregio Midden- en West-Brabant, 2025). However, awareness alone does not always translate into meaningful preparedness (Kerstholt, 2014). Scholars emphasize that a person's information-seeking behaviors, media consumption, and local social networks also shape how messages are interpreted or adopted.

Dong et al. (2024) found that the effectiveness of risk communication in increasing preparedness depends heavily on how information is framed and delivered. Their study revealed that risk communication directly enhances preparedness intention, but its impact on risk perception is less straightforward. Providing information about flood risks is not enough to change perceptions; instead, effective communication strategies must address emotional and cognitive barriers to preparedness.

Specifically, Griffin et al. (1999) propose that seven factors: individual characteristics, perceived hazard characteristics, affective response to the risk, felt social pressures to possess relevant information, information sufficiency, one's capacity to learn, and beliefs about the usefulness of information in various channels—influence the extent to which people seek and critically process risk information. Their model suggests that deeper engagement with risk messages (rather than passive exposure) leads to more stable risk-related attitudes and behaviors over time.

2.6 Social Influence and Peer Pressure

While much research focuses on individual factors, social norms are a powerful determinant of preparedness (Haunschild et al., 2024). If preparedness behaviors are reinforced through family, friends, or online communities, individuals are more likely to adopt them (Griffin et al., 1999). In particular, participation in online preparedness communities (e.g., prepper forums, neighborhood groups) has significantly increased preparedness behaviors. Therefore, social influence was initially considered as a potential predictor of preparedness in this thesis, investigating how peer pressure, discussion frequency, and perceived social norms affect crisis preparedness.

He et al. (2023) researched the concept of peer pressure in disaster preparedness, highlighting how individuals adjust their perceptions based on observing preparedness actions of others. Additionally, peer households and opinion leaders influence disaster preparedness behaviors through social learning and convergence effects. Peer effects, particularly through opinion leaders, significantly amplify campaign effectiveness by promoting shared behavioral norms (He et al., 2023). Although peer effects show strong predictive power in some contexts, particularly in community-driven or informal preparedness networks, these effects are more variable in government-led campaign settings like 'Denk Vooruit'. Also, social norms surrounding preparedness can create tension, as excessive preparation is often perceived as hoarding or anti-social behavior, discouraging individuals from fully engaging in protective actions.

Based on the literature table (Appendix A), social influence was excluded due to its mixed effects on preparedness behavior, particularly in governmental campaigns like 'Denk Vooruit.' While social norms may have some impact, they are less consistent than factors such as risk perception and efficacy beliefs. Moreover, the campaign's emphasis on individual responsibility and government guidance aligns poorly with social influence mechanisms, reducing the theoretical fit of peer-based predictors. Excluding social influence ensures focus on more directly relevant variables.

2.7 Benevolence and Crisis Preparedness

Benevolence, defined as the “preservation and enhancement of the welfare of those with whom one is in frequent contact” (Fegg et al., 2005, p.155), is critical in shaping crisis preparedness behaviors. Haunschild et al. (2024) found that individuals with stronger benevolent values are significantly more likely to engage in preparedness activities, suggesting that concern for the well-being of others, like family, neighbors, and broader communities, motivates action. Unlike preparedness motivated by self-preservation, benevolence-driven preparedness aligns with a collective responsibility framework, where individuals see preparedness not as an individualistic effort but a means to contribute to collective resilience (Ma et al., 2023). It seems logical that benevolence plays a minor role in the Netherlands as it is an individualistic society rather than in collectivist countries like Thailand (Nardon, 2006).

By showing how being prepared helps others, for example, by making sure there are enough resources to go around and easing the pressure on emergency services, crisis

communication can tap into people's desire to do good and promote the idea that preparing is a way to care for your community, not just yourself (Haunschild et al., 2024).

Although benevolence influences crisis preparedness, it was excluded from this study. The literature analysis (Appendix A) showed that its effect size is smaller than that of risk perception and efficacy beliefs, which align more closely with the objectives of the 'Denk Vooruit' campaign. Moreover, benevolence plays a less prominent role in individualistic societies like the Netherlands. It was therefore decided to focus on stronger predictors of preparedness behavior.

2.8 Conceptualizing Preparedness Behavior

While the above literature primarily addresses how factors might influence preparedness decisions, examining how these factors interact is necessary. Community resilience scholarship, for instance, highlights that collective responses often outperform isolated individual efforts (Paton & Johnston, 2001). If citizens trust the government but lack efficacy beliefs or perceive high risk but have minimal awareness of recommended actions, preparedness outcomes might fall short. Preparedness behavior refers to proactive actions individuals or groups take to ensure they have the necessary resources and plans to respond effectively to potential disasters or emergencies. These actions aim to mitigate risks and enhance the ability to manage unforeseen events. Preparedness behaviors include storing food and water, developing a household emergency plan, assembling an emergency kit, and other activities that reduce the risk of injury and damage (Najafi et al., 2017).

While previous studies often measure attitudes toward preparedness, the study of Haunschild et al. (2024) emphasizes actual preparedness behaviors. Effective preparedness goes beyond intention; it requires tangible actions such as:

- Owning an emergency kit (e.g., first aid, food, water).
- Developing an evacuation plan with family members.
- Attending crisis preparedness workshops or training sessions.

This study focuses on actual actions people take, not just what they say they plan to do, using Haunschild et al.'s (2024) approach to measuring preparedness. Understanding the influence of the variables mentioned in the previous paragraphs is worth researching to improve public campaigns such as 'Denk Vooruit' to optimize societal resilience. Exact adaptations of Haunschild et al.'s (2024) approach are provided in Section 3.5 and Appendix D.

2.9 Synthesis of Literature: Research Hypotheses and Conceptual Framework

Building on the theoretical framework and previous empirical findings, this study proposes the following hypotheses:

H1: Risk perception (perceived threat severity and vulnerability) is positively associated with preparedness behavior.

H2: Efficacy beliefs (self-efficacy and response efficacy) are positively associated with preparedness behavior.

H3: Trust in government is negatively associated with preparedness behavior when trust levels are very high, but positively associated when trust is moderate.

H4: Campaign awareness moderates the relationship between the independent variables (risk perception, efficacy beliefs, and trust in government) and preparedness behavior, such that higher campaign awareness strengthens these associations.

The conceptual framework in Figure 3 visualizes how the variables are hypothesized to directly affect preparedness behavior, with campaign awareness acting as a moderator.

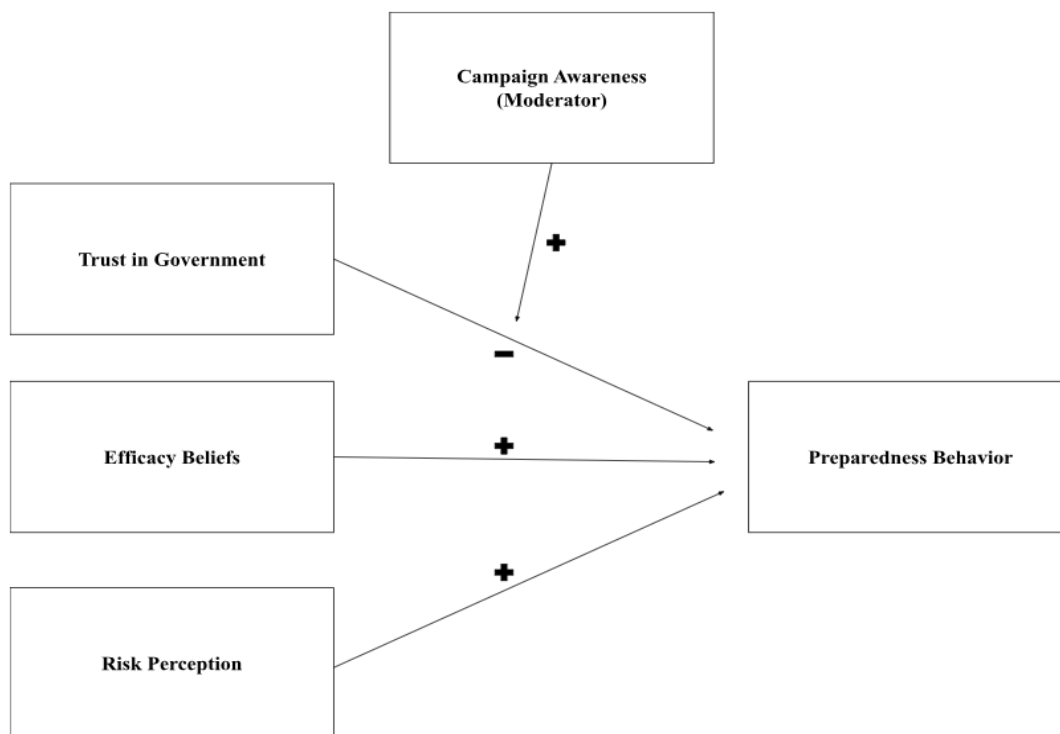


Figure 3. Conceptual model of hypothesized relationships

In sum, this theory section shows that many different factors influence how people prepare for crises and provides a foundation for the empirical analysis. With these hypotheses and the conceptual model, the first sub-question is answered.

3. Methodology

This chapter outlines the research design, sample selection, data collection methods, and analytical strategy for evaluating the effectiveness of the ‘Denk Vooruit’ campaign in fostering crisis preparedness in the Netherlands. This study employs a quantitative, hypothesis-testing approach within a large-n cross-sectional survey design, assessing the influence of risk perception, efficacy beliefs, trust in government, and campaign awareness on citizens' preparedness behaviors. This approach is commonly used in public administration and risk communication research, allowing for statistical generalization and robust hypothesis testing (Babbie, 2016; Bryman, 2012).

3.1 Research Design

This study employs a large-n cross-sectional survey design to explore the relationships between key factors influencing preparedness behaviors. A large-n approach is appropriate because it enables hypothesis testing with statistical power, ensuring findings are generalizable beyond the sample (Creswell & Poth, 2017). Surveys are an effective tool for capturing self-reported perceptions, attitudes, and behaviors across a large sample in a standardized manner (Fowler, 2013). The survey format also allows for systematic measurement of multiple theoretical constructs, enabling the study to test relationships between risk perception, efficacy beliefs, trust in government, and preparedness behaviors in a structured manner.

3.2 Sample Selection and Recruitment

This study survey contains data from 603 Dutch participants after data cleaning. The original target was approximately 180 responses, based on established guidelines for multiple regression analysis, which recommend between 15 and 30 observations per independent variable (Memon et al., 2020). With three primary predictors; risk perception, efficacy beliefs, and trust in government, this baseline provides sufficient statistical power.

A convenience sampling approach is used, drawing on online and offline channels while actively seeking demographic balance. The sampling strategy emphasizes variation across age groups (such as students, working-age adults, seniors), gender, and educational and socioeconomic background. Demographic monitoring throughout the data collection process guides targeted follow-up efforts to increase inclusivity and mitigate selection bias.

Recruitment took place through social media platforms like Facebook and LinkedIn (see Appendix D), outreach within community and neighborhood networks, and in-person

interactions at public locations, including train stations and supermarkets (Aldi and Albert Heijn), to capture a socioeconomic variation.

The data collection period was limited to about two weeks to minimize temporal biases and reduce the influence of external events such as media coverage or crisis developments that could distort perceptions of risk, trust, or campaign awareness (Fowler, 2013).

3.3 Data Collection Procedure

Data was collected using an online questionnaire developed in Qualtrics and disseminated via digital platforms and targeted email invitations. Participants were presented with an introductory statement outlining the purpose of the study, ensuring anonymity, and requesting informed consent in accordance with ethical research guidelines. The survey was anonymous to encourage honest and unbiased responses, thereby reducing the potential for social desirability bias (Babbie, 2016). Although the survey was designed to take approximately five minutes, Qualtrics metadata indicated an average completion time of around seven minutes. This longer duration can be attributed to some participants pausing or returning to the survey at a later time. It is therefore reasonable to assume that the average active completion time aligns with the expected duration of approximately five minutes.

3.4 Pre-Test and Pilot Procedure

A speak-aloud pre-test was conducted with five Dutch participants (aged 21–63) to ensure clarity, usability, and engagement. Participants verbalized their thought processes while completing the survey, allowing the researcher to detect confusion or misinterpretations.

Three areas required revision. First, the negatively phrased efficacy item: *"Ik denk niet dat persoonlijke voorbereiding enig verschil maakt tijdens een ramp"* was found confusing. It was reworded for clarity while retaining its reversed logic. Second, ambiguity around the preparedness item on water reserves led to clarifying that the question referred to stored emergency water, not tap water. Third, the energy-and-communication-tools item was updated to include examples (e.g., zaklamp, powerbank) in the question stem, improving understanding.

The average completion time was 4 minutes and 45 seconds, with no signs of fatigue. Further adjustments were based on academic feedback. To preserve psychometric integrity, full validated scales were retained, including all seven items from Ho et al.'s (2008) risk

perception scale and twelve items from Burns et al.'s (2023) Trust in Government Measure, adapted to crisis contexts. Complex terms were simplified for accessibility.

A second pre-test ($n = 4$) confirmed further refinements. Participants suggested using clearer terms (e.g., *risicobewustzijn* instead of *risicoperceptie*) and adding examples for clarity (e.g., *radio op batterijen*, *pijnstillers*). Items on fire safety, media, and medication were clarified or reworded for relevance.

To reduce acquiescence bias, three items, one each section (risk perception, efficacy and trust), were phrased negatively. Participants understood them, albeit with slight effort. All reversed items were later recoded so that higher scores consistently indicated greater perception, efficacy, or trust.

3.5 Measurement Scales

To evaluate key variables related to crisis preparedness and public engagement with the 'Denk Vooruit' campaign, the study employs validated and carefully adapted measurement scales. Each scale was selected based on established reliability and validity from previous research and adapted for relevance to the Dutch context. Basic demographic variables were collected, including age, gender, education level, living environment (urban/rural), and estimated monthly net income (Appendix B).

Adaptation of Measurement Scales

To ensure methodological rigor and conceptual completeness, the original 7-item risk perception scale developed by Ho et al. (2008) was fully adopted and adapted. This scale assesses flood and landslide risk perception among Taiwanese residents. This instrument, originally adapted from the psychometric risk paradigm introduced by Fischhoff et al. (1978), captures cognitive and emotional dimensions of risk perception. It includes the following components: perceived likelihood, knowledge of mitigation actions, perceived controllability, perceived threat to life, impact on life quality, anticipated financial loss, and emotional dread.

In adapting the scale for the Dutch context, covering a broader range of crises such as cyberattacks, energy blackouts, and pandemics, all original dimensions were retained to maintain theoretical integrity and psychometric robustness. This comprehensive approach ensures coverage of risk perception's affective and cognitive aspects while allowing comparisons with international literature. By including items on physical harm and financial loss, the scale aims to capture key facets of personal vulnerability, as identified in Ho et al.'s (2008) original framework.

Although the original study by Ho et al. (2008) does not report Cronbach's alpha, the scale's reliability and construct validity are supported by detailed inter-item correlation analyses and factor-analytic findings. Specifically, the authors found consistent clustering of the items into two theoretically meaningful dimensions: *impact* (likelihood, threat to life, impact on life quality, financial loss, dread) and *controllability* (knowledge of mitigation actions, perceived control). These dimensions exhibited meaningful associations with demographic variables and disaster experience, reinforcing their explanatory power. The scale also demonstrated consistent structure across flood and landslide victim samples, further underscoring its applicability across hazard types. As such, the original scale offers a theoretically grounded, empirically supported foundation for assessing risk perception in diverse crisis contexts.

The efficacy beliefs scale, grounded in Protection Motivation Theory (PMT), was informed by Rogers (1975) and later abbreviated applications in public health and disaster contexts (Qiu et al., 2023). To assess participants' perceived confidence in their ability to prepare for disasters, the self-efficacy and response-efficacy item from Qiu et al. (2023) was adapted, who used two single-question measures in the National Household Survey. In this thesis, self-efficacy was measured using a three-item scale (e.g., "I am confident I can prepare adequately for a disaster"), each rated on a 5-point Likert scale ranging from 1 (not at all confident) to 5 (extremely confident). Items were averaged to form a composite efficacy score, with higher values indicating stronger perceived efficacy in disaster preparedness. This multi-item scale allowed for a more nuanced and reliable assessment of the construct.

To measure trust in government during crises, the validated 13-item Trust in Government Measure (TGM) developed by Burns et al. (2023) was adapted. This original scale was designed to assess general trust in the federal government in Canada. To enhance focus and psychometric robustness, the 12 items with the highest factor loadings from their confirmatory factor analysis (ranging from 0.79 to 0.89) are selected, excluding two lower-loading items (Q1 and Q2) to streamline the measure without compromising internal consistency. Additionally, each item's wording was adapted to reflect trust in the context of crisis situations (e.g., natural disasters, pandemics), ensuring relevance to the emergency preparedness domain while preserving the original dimensions of competence, beneficence, and integrity.

The dependent variable, preparedness behavior, was adapted from Haunschild et al. (2024), who originally developed a multi-dimensional household preparedness index for the German context, focusing on large-scale disasters such as floods and supply chain

disruptions. Recognizing that this scale was developed in a different national and hazard context, this thesis explores whether a condensed version of the scale is applicable to Dutch citizens facing hybrid risks, such as cyberattacks, infrastructure failure, and extreme weather. This methodological test may inspire future adaptation or refinement of preparedness indices in European contexts with comparable institutional structures.

To ensure conceptual alignment while keeping the survey concise and respondent-friendly, all items were reformulated into 4-point ordinal scales, following the logic of resource sufficiency, functional diversity, and personal responsibility. The revised scale retains five core components: food and water stockpiling, energy and communication access, medical readiness (first aid, medication, training), fire safety and emergency kits and document security for evacuation.

Each question was constructed to directly match a single dimension of household readiness and allows for straightforward scoring. In some cases, where the original item combined multiple behaviors (e.g., hygiene and news access), the dimension was narrowed to better fit Dutch public campaign guidelines and reduce ambiguity.

While evacuation preparedness (e.g., pre-packed bags, digital copies of IDs) was not treated as a separate item, it is indirectly captured in the final item on fire safety and evacuation supplies, which includes safe storage of important documents. This mirrors the '*Denk Vooruit*' campaign's messaging, which emphasizes practical readiness (e.g., power banks, medications) over full-scale evacuation logistics. These adaptations aim to preserve theoretical coverage across behavioral indicators while improving clarity and contextual fit in the Dutch setting.

In sum, this thesis is also a methodological test: it examines how well internationally validated measures perform when adjusted for use in a Dutch, campaign-specific context. These adaptations balance theoretical integrity with contextual relevance and respondent clarity.

Appendix B provides a comprehensive overview of each measurement scale, including item wording, scale structure, and response formats. This appendix details the origin of each scale, the rationale for its adaptation, and example items used in the survey instrument in English and the full survey in Dutch.

The exclusion of non-Dutch speakers limits the multicultural representativeness of the sample, but aligns with the campaign's language and primary target audience. No highly sensitive topics were addressed; however, some items relating to crisis anxiety could cause discomfort, which was mitigated by emphasizing voluntary participation and full anonymity.

Item reliability was assessed post hoc, and poorly performing items were excluded based on internal consistency as discussed in chapter 4.1 (See also table of Cronbach's alphas in Appendix C1).

3.6 Data Analysis Strategy

The data was analyzed using SPSS, following a three-stage approach:

1. **Descriptive Statistics:** Summarizes demographic, psychological, and behavioral variables through means, standard deviations, frequencies, correlations, reliability scores, VIFs, and completion times to provide a foundational overview for further analysis.
2. **Multiple Regression Analysis:** Examining the predictive power of independent variables on preparedness behaviors.
3. **Moderation Analysis:** Testing whether campaign awareness strengthens or weakens relationships between key variables.

4. Results

This chapter addresses the second sub-question by data analysis, following a structured multi-step approach. Looking at which psychological, informational, and demographic variables significantly predict individual crisis preparedness behavior in the Netherlands. It follows a structured process, beginning with data cleaning and preparation, followed by descriptive statistics, assumption testing, and hierarchical regression analysis. The chapter concludes with insights from open-ended survey responses to provide qualitative context to the quantitative results.

4.1 Data Cleaning, Recoding, and Standardization

Initially, the dataset (n=824 total responses) was cleaned and prepared by filtering for fully completed surveys (n = 603 valid responses), excluding invalid entries such as non-numeric or inappropriate text responses, ensuring data integrity. Reliability testing was then conducted using Cronbach's Alpha for each multi-item scale (See Appendix C). Trust in Government ($\alpha = .924$), Campaign Awareness ($\alpha = .840$), and Preparedness Behavior ($\alpha = .745$) showed good to excellent internal consistency, while Efficacy Beliefs ($\alpha = .549$) was retained despite a lower alpha due to prior validation. Risk Perception initially showed poor reliability ($\alpha = .579$), which improved to $\alpha = .692$ after removing items 2 and 3. Following these checks, composite variables were computed in SPSS for each construct using the "Compute Variable" function.

To simplify the regression model and facilitate clearer interpretation of categorical predictors, the variables Education, Income, and Area of Living were recoded into dummy variables using binary coding (0 and 1). This approach reduces multicollinearity risk and ensures each category's effect can be more directly compared to a reference group. For instance, Area of Living was recoded such that 0 = rural and 1 = urban/suburban, enabling a straightforward interpretation of how living in more populated areas relates to Preparedness Behavior. Similarly, Education was recoded as 0 = lower education and 1 = higher education, and income as 0 = lower income and 1 = higher income. The threshold distinguishing lower from higher income was based on the modal income in the Netherlands (Verdam, 2025). This model adjustment follows statistical best practices and was done in line with feedback received during the thesis supervision process.

In line with recommendations for improving interpretability and comparability of regression coefficients, all continuous variables, including Age, the dependent variable (Preparedness Behavior), main predictors, and the moderator (Campaign Awareness), were

standardized (z-scores) before analysis. Standardizing allowed all variables to be expressed on the same scale (mean = 0, SD = 1), facilitating the interpretation of beta coefficients as the expected change in standard deviations of the outcome for each standard deviation change in the predictor (Schielzeth, 2010). This approach allows for the inclusion of interaction terms for moderation analysis in the regression. While this means that the results are expressed in standardized units rather than raw scores, this fits the study's aim to compare relative predictor strengths rather than to forecast actual preparedness scores.

4.2 Descriptive Statistics and Bivariate Insights

Descriptive statistics were calculated for scale and categorical variables, offering a general sample overview. The average age of respondents was 36.60 years (SD = 15.96), with a majority identifying as female (71%). Table 4.1 presents descriptive statistics for all key variables. On average, participants reported a Risk Perception score of 3.43 (SD = 0.62) and Efficacy Beliefs of 3.37 (SD = 0.72). The mean score for Trust in Government was 2.87 (SD = 0.70), while Campaign Awareness averaged 2.33 (SD = 1.05) on a 5-point scale. Preparedness Behavior showed a mean score of 2.26 (SD = 0.58). Even though there is no reference to which to compare these descriptives, these findings offer a foundational overview of Dutch citizens' psychological and behavioral aspects of crisis readiness. On average, participants took approximately 7.43 minutes ($M = 445.87$ seconds, $SD = 1222.41$) to complete the questionnaire, as recorded by Qualtrics metadata. Descriptive statistics indicated that the mean Campaign Awareness is ($M = 2.33$, $SD = 1.05$ on a 5-point scale). However, only 24.5% of participants (strongly) agreed that they were aware of the campaign. Despite this limited reach, those with higher levels of awareness reported significantly higher preparedness scores. Campaign Awareness emerged as one of the strongest predictors of Preparedness Behavior, suggesting a clear area for practical intervention.

Specifically, these findings underscore the importance of improving the visibility, clarity, and message retention of the 'Denk Vooruit' campaign. While mere exposure appears beneficial, items assessing recall of key messages (e.g., "I can recall the main message of the campaign") scored lower than basic awareness, indicating that message memorability and resonance may be limited. Enhancing the frequency and emotional salience of campaign messaging could therefore further strengthen its behavioral impact.

Table 4.1 *Descriptive statistics and correlations*

	Cronbach's alpha	Mean (St. Dev.)	Correlations										VIF
			1	2	3	4	5	6	7	8	9	10	
(1) Preparedness SCALE (1-4)	.745	2.26(0.58)	1	-	-	-	-	-	-	-	-	-	-
(2) Gender 0=Male 1=Female	-	0.71	.006	1	-	-	-	-	-	-	-	-	1.12
(3) Age	-	36.60(15.96)	.319**	-.127**	1	-	-	-	-	-	-	-	-
(4) Education DUMMY (1 = higher education)	-	.37(.48)	.000	.028	.026	1	-	-	-	-	-	-	1.01
(5) Residency DUMMY (1 = urban and suburban)	-	.85(.36)	-.185**	-.011	-.042	-.025	1	-	-	-	-	-	1.01
(6) Income DUMMY (1 = high)	-	.23(.42)	.126**	-.249**	.386**	.078	.045	1	-	-	-	-	1.28
(7) Risk SCALE (1-5)	.692	3.43(.62)	-.023	.174**	-.023	-.032	.008	-.026	1	-	-	-	1.04
(8) Efficacy beliefs SCALE (1-5)	.549	3.37(.72)	.138**	-.063	-.064	-.039	.071	.086*	.075	1	-	-	1.07
(9) Trust SCALE (1-5)	.924	2.87(.7)	-.017	-.084*	-.022	.044	-.047	.095*	-.012	.196**	1	-	1.06
(10) Campaign awareness SCALE (1-5)	.840	2.33(1.05)	.253**	.036	.260**	-.017	-.042	.167**	.083*	.202**	.072*	1	1.19

: p< 0,05; *: p<0,01; ****: p<0,001

Table 4.1: Descriptives (age and all IVs and DVs are z-score

In addition, a Pearson's correlation analysis was conducted to examine the strength and direction of the relationships between the dependent variable Preparedness Behavior and the independent variables (see Table 4.1). This step detects any high intercorrelations that could compromise the reliability of subsequent regression analyses, per the best practices outlined by Field (2013). The analysis revealed that age has a moderate, positive and statistically significant correlation with preparedness behavior ($r = .319, p < .01$), indicating that older participants were more likely to report higher levels of household preparedness. Efficacy Beliefs ($r = .138, p < .01$) and Campaign Awareness ($r = .253, p < .01$) were also significantly positively associated with preparedness, suggesting that confidence in one's ability to prepare and awareness of the 'Denk Vooruit' campaign are meaningful predictors of preparedness actions.

A small but significant positive correlation was found between Income and Preparedness ($r = .126, p < .01$), which may reflect that greater financial resources facilitate the ability to stock supplies or invest in emergency equipment. In contrast, living in more urban areas was negatively associated with preparedness ($r = -.185, p < .01$), potentially reflecting reduced perceived vulnerability or space limitations in urban dwellings. No significant correlations were found between Preparedness and Risk Perception ($r = -.023, p = \text{n.s.}$), Trust in Government ($r = -.017, p = \text{n.s.}$), Gender ($r = .006, p = \text{n.s.}$), or Education Level ($r = .000, p = \text{n.s.}$).

4.3 Assumptions checks

Key assumptions were assessed to ensure the reliability and validity of the multiple regression analysis. Multicollinearity was examined using the Variance Inflation Factor (VIF), with all values falling below the commonly accepted threshold of 2.5. Additionally, no independent variables were highly correlated with each other or with the dependent variable. Together, these findings indicated that multicollinearity was not a concern and justified the inclusion of all variables in the regression analysis (see Table 4.1).

Second, the assumption of normality of residuals was evaluated. The histogram (Figure 4) of standardized residuals displayed a bell-shaped curve, indicating that the residuals are approximately normally distributed. The normal P-P plot also showed that the standardized residuals closely follow the expected diagonal line, further supporting the normality assumption.

Third, linearity and homoscedasticity were assessed via scatterplots of standardized residuals against predicted values. The scatterplot showed no clear pattern, suggesting that the assumptions of linearity and homoscedasticity are reasonably met.

Finally, the residual statistics also supported the assumptions, with standardized residuals falling mostly within the acceptable range of -3 to +3. Together, these diagnostics, located in Appendix C, indicate that the assumptions of multiple regression were sufficiently met, allowing for meaningful interpretation of the regression results.

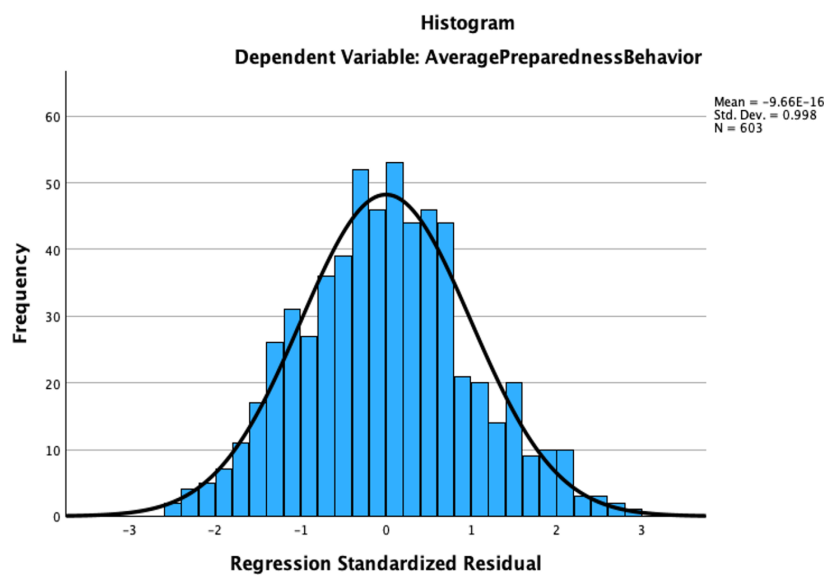


Figure 4: Histogram of the dependent variable, testing for normality

4.4 Hierarchical Multivariate Regression Analysis

To explore which factors significantly predict household Preparedness Behavior, a hierarchical multivariate regression analysis was conducted in three steps (Table 4.2). The dependent variable was Preparedness Behavior, measured as a z-score. In Model 1, only demographic control variables were included. Model 2 added the main independent variables of interest, and Model 3 introduced an interaction term to examine potential moderation effects.

Model 1 included Age, Gender, Education, Income, and Area of Living. This model was significant overall ($F(5, 593) = 18.336, p < .001$) and explained 13.4% of the variance in Preparedness Behavior ($R^2 = .134$, Adjusted $R^2 = .127$). Age ($B = .309, p < .001$) and Area of Living ($B = -.481, p < .001$) emerged as significant predictors. Specifically, older participants scored higher on Preparedness Behavior, while those living in more urban areas were less prepared.

Model 2 incorporated the psychological and communication predictors: Risk Perception, Efficacy Beliefs, Trust in Government, and Campaign Awareness. This step improved the overall model fit ($F(9, 589) = 14.923, p < .001$) and explained an additional 5.2% of the variance ($R^2 = .186$, Adjusted $R^2 = .173$). Efficacy Beliefs ($B = .157, p < .001$) and Campaign Awareness ($B = .145, p < .001$) are positively associated with Preparedness, while Risk Perception ($B = -.049, p = .200$) and Trust in Government ($B = -.059, p = .125$) does not reach statistical significance. The control variables remain consistent in their direction and significance, with Age and Area of Living still significantly predicting Preparedness.

Model 3 introduced an interaction term between Efficacy Beliefs and Campaign Awareness to test for a potential moderation effect. While this model remained significant ($F(10, 588) = 13.561, p < .001$) and explained a slightly higher proportion of variance ($R^2 = .187$, Adjusted $R^2 = .174$), the interaction term itself was not significant ($B = -.040, p = .265$). This suggests that Campaign Awareness does not significantly influence the relationship between Efficacy Beliefs and Preparedness. The effects of Age, Area of Living, Efficacy Beliefs, and Campaign Awareness remained robust. There is a potential ceiling or floor effect in the Campaign Awareness variable. Descriptive statistics revealed that awareness of the ‘Denk Vooruit’ campaign was generally low ($M = 2.33$ on a 5-point scale), with only 24.5% of participants indicating strong awareness. This restricted range may have reduced the statistical power to detect significant interaction effects involving Campaign Awareness, such as its hypothesized moderation of efficacy beliefs. Future studies could benefit from including participants with a wider range of exposure to public campaigns or employing experimental designs to ensure adequate variance in awareness levels.

In summary, all three models were statistically significant and demonstrated meaningful explanatory power. Age and Area of Living consistently predicted Preparedness behavior across all models. Among the psychological and campaign variables, Efficacy Beliefs and Campaign Awareness were the strongest positive predictors. The lack of a significant interaction effect suggests that Campaign Awareness and Efficacy Beliefs contribute independently to Preparedness Behavior.

Table 4.2 *Hierarchical Multivariate Regression on Preparedness Behavior*

	Model 1	Model 2	Model 3
Age(Z)	.309***	.288***	.291**
Gender	.107	.102	.097
Income(Dummy,1=higher income)	.064	.002	.003
Residency(Dummy,1=urban, suburban)	-.481***	-.500***	-.503***
Education(Dummy,1=Higher education)	-.037	-.011	-.010
Risk Perception(Z)		-.049	-.050
Efficacy beliefs(Z)		.157***	.158**
Trust in Gov(Z)		-.059	-.061
Campaign Awareness(Z)		.145**	.151***
Efficacy beliefs*Campaign Awareness			-.040
F(sign)	18.336**	14.923***	13.561***
R2	.134	.186	.187

Regression results (= $p < 0,05$; **= $p < 0,01$; ***= $p < 0,001$)*

4.5 Comments retrieved from the open section of the survey

Respondents expressed a wide range of opinions regarding crisis preparedness and the role of the government, with several key themes emerging. Some participants admitted they were not well-prepared but acknowledged the importance of taking action, for example, one noted, “I should really spend more time putting together a kit ‘just in case.’” Some cited logistical or financial barriers to preparation, particularly those living in poverty or debt. One respondent suggested that “for people with a low income, an emergency kit should be sent,” while another proposed that “the government should create a standard emergency kit and distribute it,” emphasizing the need for basic equity. Others suggested more accessible forms of support, such as subsidized kits or public guidance through television or courses, with suggestions like “an emergency kit could be offered at a reduced price,” and “maybe offer a course on what you should always have at home, at a minimum.”

Trust in the government emerged as a recurring concern. Some respondents expressed skepticism, stating that “the government doesn’t offer support but instead creates crisis situations,” while others referred to the government as “a useless mess,” citing the COVID-19 response as a major turning point: “During corona, the government showed it was completely trapped in groupthink.”

Many emphasized the importance of accessible and inclusive communication, recommending the use of “social media channels, in other languages, and in easily understandable language” to reach all citizens. Mental and social aspects of preparedness were also highlighted, with some stating that “the mental component is very important,” and urging a return to solidarity: “We should start looking out for one another again.”

Meanwhile, a subset of respondents expressed skepticism or fatalism, minimizing the value of preparation: “We’ll see what happens. People suffer most from fearing what they fear,” or doubting the practicality of stockpiling: “Are you really going to flee with all those canned goods on your back?” Finally, others advocated for more tailored planning, such as “guidelines for small households,” or specific preparation for cyberattacks or disease outbreaks.

This diversity of perspectives illustrates the complexity of promoting public preparedness in a way that feels inclusive, empowering, and credible to citizens from different backgrounds and with different worldviews.

5. Conclusion & Discussion

This chapter aims to answer the main research question and sub-questions 2 and 3. To answer this, relevant theoretical and empirical insights were explored in earlier chapters. Academic crisis communication and government preparedness literature informed the development of specific hypotheses, which were subsequently tested using survey data from Dutch residents. The results highlight the importance of efficacy beliefs and campaign awareness as key predictors of preparedness, while variables such as trust in government show limited explanatory power. These findings are interpreted in light of Protection Motivation Theory and other behavioral models, leading to theoretically grounded and policy-relevant recommendations. Drawing from statistical analysis and open-text survey responses, this thesis offers a comprehensive perspective on how crisis preparedness can be more effectively promoted through targeted communication and institutional support.

5.1 Hypotheses and Contribution to Literature

To answer the second sub-question and part of sub-question 3, this study tested four hypotheses concerning psychological and informational predictors of individual crisis preparedness behavior. The results partially support the proposed theoretical model and contribute nuanced insights to ongoing academic debates on risk perception, self-efficacy, institutional trust, and public communication.

H1, which proposed that higher risk perception would be associated with increased preparedness behavior, was not supported. Risk perception was neither significantly correlated with preparedness ($r = -.023$, $p = \text{n.s.}$) nor a significant predictor in the regression analysis ($B = -.049$, $p = .200$). This diverges from previous findings (e.g., Terpstra, 2010; Bronfman et al., 2015; Slovic, 2016), which often highlight perceived threat severity and vulnerability as key behavioral drivers. One possible explanation lies in this study's all-hazard preparedness approach, which examines general readiness for various types of crises (e.g., cyberattacks, floods, power outages), rather than focusing on a single salient hazard. Much of the earlier research measured preparedness intentions in response to specific, concrete threats, such as floods or pandemics, which may evoke stronger and more personal emotional responses. In contrast, general preparedness may be perceived as less urgent or harder to visualize, weakening the motivational impact of abstract risk perception. This supports Slovic & Peters' (2006) argument that emotional resonance and personal relevance are critical for risk perception to affect behavior.

H2, which predicted that greater efficacy beliefs would be associated with increased preparedness behavior, was supported. Efficacy beliefs were significantly and positively correlated with preparedness ($r = .138, p < .01$) and remained a strong predictor in the regression model ($B = .157, p < .001$). This finding confirms key assumptions of Protection Motivation Theory (Witte & Allen, 2000; Rogers, 1975) and mirrors prior findings by Kievik & Gutteling (2011) and Kerstholt (2014), who emphasize that self-efficacy (confidence in one's ability to act effectively) is a robust driver of crisis-related behavior. In an all-hazard context, where preparedness involves a wide range of actions (from gathering supplies to formulating family plans), this result underlines the importance of personal competence and empowerment as central motivators. For public communication campaigns, this implies that boosting efficacy, rather than amplifying fear, may be a more effective strategy for achieving behavioral change.

H3, which hypothesized that high trust in government might reduce preparedness behavior due to over-reliance, was not supported. Trust in government was not significantly correlated with preparedness ($r = -.017, p = \text{n.s.}$) and did not predict preparedness in the regression model ($B = -.059, p = .125$). This result complicates the delegation effect theory (Grothmann & Reusswig, 2006; Dong et al., 2024), which argues that high institutional trust can suppress personal preparedness by shifting responsibility to authorities. One reason for this null effect may be the nature of all-hazard preparedness: individuals may interpret general preparedness as less clearly tied to government responsibility, and thus less susceptible to delegation logic. Alternatively, this may reflect a context-specific pattern where moderate but passive trust neither strongly discourages nor encourages action. These findings add to a growing body of literature suggesting that trust's impact on preparedness is conditional, depending on both the perceived nature of the threat and the government's communication framing.

H4, which proposed that campaign awareness would moderate the relationship between psychological variables and preparedness, was not supported. Although campaign awareness had a significant main effect on preparedness ($r = .253, p < .001; B = .145, p < .001$), the interaction effect with efficacy beliefs was not significant ($B = -.040, p = .265$). A plausible explanation is the range restriction in campaign exposure: few respondents reported strong familiarity with 'Denk Vooruit', reducing the variability needed to detect moderation. Still, the significant main effect aligns with Seeger et al. (2018) and Griffin et al. (1999), who emphasize that message visibility and clarity are important precursors of behavioral change, especially when paired with motivational messaging. The result suggests that passive

exposure is insufficient and that deeper cognitive and emotional engagement with the campaign's content is likely needed to influence internal psychological variables like efficacy or risk perception.

These findings answer sub-question 2 and partly sub-question 3 by identifying supported hypotheses and their theoretical implications.

Contribution to the Literature

These findings contribute to theory and scholarship in crisis communication and public administration by challenging the generalizability of established risk perception models (Slovic & Peters, 2006; Kievik & Gutteling, 2011). In an all-hazard context like the Netherlands, characterized by high institutional capacity and diffuse threat scenarios, emotional salience and scenario specificity may play a more decisive role than abstract risk perceptions. At the same time, the significance of efficacy beliefs, particularly self-efficacy, reaffirms core tenets of Protection Motivation Theory (Witte & Allen, 2000; Rogers, 1975) and highlights empowerment as a key policy and communication lever.

From a public administration perspective, these findings offer meaningful insight into the complexities of governing through communication in a risk-saturated society. In line with Braams' (2023) call for transformative government, the results show that psychological empowerment, rather than institutional trust alone, drives preparedness. This underscores the need for crisis governance to engage citizens as active agents in meaning-making, reinforcing Braams' vision of public institutions as facilitators of resilient, co-productive citizenship.

Drawing on Boin et al.'s (2017) conception of crisis leadership as meaning-making, the study exposes a gap between the state's communicative intent and public engagement. Although the 'Denk Vooruit' campaign showed a positive association with preparedness, its limited reach and lack of interaction effects suggest that the campaign's narrative failed to deeply engage citizens or alter underlying psychological drivers. This aligns with recent PA literature that stresses how legitimacy in crisis governance relies not solely on institutional capacity, but also on emotionally resonant, trust-building, and empowering communication.

The findings further nuance the role of institutional trust. While often assumed to be a facilitator of public compliance (Poortinga & Pidgeon, 2003; Paton, 2007), trust in this study neither enhanced nor inhibited preparedness behavior, complicating delegation theory and indicating that trust's effect may be conditional on threat specificity and perceived responsibility. The research echoes current debates in PA, calling for a re-examination of

trust as a relational and context-dependent construct rather than a uniformly positive force. It also demonstrates that even when noticed, public messaging must go beyond awareness to affect deeper psychological mechanisms such as efficacy and motivation.

By recontextualizing theoretical models traditionally applied to single-hazard contexts into a broad, government-led preparedness framework, this study contributes to a more integrated understanding of how general public readiness can be fostered. It underscores the importance of communication strategies that inform and resonate, bridging crisis preparedness's psychological, emotional, and institutional dimensions. Ultimately, this research deepens public administration knowledge of how governments can cultivate resilient citizenship not merely through message dissemination, but through trust-sensitive, psychologically attuned, and meaning-rich engagement.

5.2 Reflection and Critical Discussion for Future Research

While this study's findings contribute to a better understanding of psychological and contextual predictors of crisis preparedness in the Netherlands, limitations should be acknowledged when interpreting the results. These relate to the study's methodological design, theoretical framing, and generalizability. Recommendations for future research are also discussed.

Methodological Limitations

The first limitation concerns using a cross-sectional survey design, which inherently restricts causal inference. Although regression analysis identified associations between variables such as efficacy beliefs, campaign awareness, and preparedness behavior, the directionality of these relationships remains uncertain. For instance, it is plausible that individuals who are already more prepared may be more attentive to risk communication campaigns, rather than vice versa. A longitudinal or experimental design would offer more substantial evidence of causal relationships.

Secondly, the study relies on self-reported measures for the predictors and outcome. This introduces potential biases such as social desirability (respondents may overreport preparedness behaviors to appear responsible) or recall inaccuracies regarding campaign exposure. While efforts were made to preserve anonymity and enhance reliability, future research may consider incorporating behavioral indicators (e.g., photographic evidence of emergency kits) or triangulating with qualitative interviews to enhance validity.

Third, sampling bias cannot be ruled out. While efforts were made to avoid elite-dominated areas and minimize online-only recruitment bias, the sample may still not fully represent the Dutch population. These considerations should be considered with caution when generalizing the findings.

Moreover, although the internal consistency of most constructs is acceptable to excellent (e.g., Trust in Government $\alpha = .924$), the efficacy beliefs scale shows low reliability ($\alpha = .549$). This may have attenuated effect sizes and should be addressed in future research by refining the scale items or expanding the construct. Nonetheless, the decision to retain this scale is justified based on previous academic validation and theoretical coherence.

Additionally, there may be range restriction effects related to campaign awareness, with a relatively low mean ($M = 2.33$ on a 5-point scale). Limited variance may have reduced the statistical power needed to detect interaction effects (e.g., moderation of efficacy beliefs), particularly in Model 3. Future studies could address this by using an experimental design that ensures more variation in exposure levels, or by focusing on specific subpopulations more likely to have encountered the campaign.

Theoretical Considerations

The study employed a framework largely informed by Protection Motivation Theory (PMT), alongside variables from risk perception and trust in institutions. While this model accounted for a meaningful proportion of variance in preparedness behavior, the hypothesized effect of trust in government is not supported. This result invites further reflection: trust may not have a direct effect, or its influence may be conditional, mediated by perceived government competence or moderated by personal ideology. Alternatively, the “delegation effect” may not be as straightforward as hypothesized, particularly in the context of low-trust environments where citizens may neither delegate responsibility nor act independently.

Moreover, the model treats predictors as additive and linear, but preparedness behavior may emerge from more complex or threshold-based dynamics. For example, a minimal level of efficacy or risk perception might be required before action occurs, which linear models do not capture well. Future studies could explore non-linear effects or adopt structural equation modeling (SEM) to test more intricate theoretical structures.

Generalizability and Scope

This study is innovative because it focuses on “all-hazard” preparedness, but individual motivation and perceived relevance differ substantially across threat types: climate-related, health-related, technological, or military. Aggregating these hazards into one preparedness index may obscure hazard-specific psychological processes. Future work should explore threat-specific preparedness behavior in this context, allowing for more targeted communication and policy recommendations.

Finally, the sample size is robust ($n = 603$). Still, the survey is conducted in Dutch and distributed online, likely excluding non-Dutch speakers, low-literacy individuals, and those with limited internet access: groups that face disproportionate barriers to crisis preparedness. Several open-text responses emphasized the need for accessible, multilingual, and inclusive communication, underscoring the importance of widening participation in future preparedness research and campaigns.

6. Policy Recommendations

This chapter outlines policy recommendations that stem from the findings and aim to enhance public resilience to crises in the Netherlands, addressing the last part of sub-question 3. These recommendations are communication-oriented and structural, recognizing that individual behavior changes within broader institutional and social contexts. A finding-to-recommendation table can be found in Appendix D.

The central insight from the data is that people prepare for crises not merely because they are aware of risks but because they believe their efforts will make a meaningful difference, aligning with PMT, which emphasizes the importance of response efficacy and self-efficacy in motivating protective behaviors (Rogers, 1983). In the case of Denk Vooruit, campaign messages that inform about potential threats such as floods, power outages, or cyber disruptions are insufficient if they do not also promote confidence and clarity about how to act. To this end, communication strategies should be designed to emphasize simple, actionable, and empowering steps. For instance, advice should be targeted to specific demographic groups, such as students living alone, the elderly, or households with children, so that people see preparedness as personally relevant.

The qualitative responses in this study underscore that when citizens feel overwhelmed or uncertain, they are less likely to act, even when they acknowledge that preparedness is important. This suggests that fear-based messaging may be counterproductive unless coupled with clear, manageable solutions. Consistent with the Extended Parallel Process Model (Witte, 1992), messages should evoke a sense of urgency without inducing helplessness. Therefore, Denk Vooruit communications should include concrete testimonials in the form of short videos or stories featuring ordinary citizens, such as families, students, or elderly individuals, who explain how they prepared for a potential crisis, what challenges they faced, and how they overcame them. These stories should be shared across multiple platforms: Instagram Reels and TikTok to engage younger audiences, Facebook and local news websites for broader reach, and during commercial breaks on national television for maximum visibility. In addition, printed visual guides and checklists can be distributed in supermarkets, libraries, and schools to model key behaviors and reinforce campaign messages. By showcasing relatable examples across varied channels, these materials can foster motivation and confidence, directly strengthening the efficacy beliefs that, as shown in this study, are strong predictors of actual preparedness behavior.

Another striking finding is that despite being a national initiative, Denk Vooruit has relatively low levels of public awareness. Only about a quarter of survey participants reported

being familiar with the campaign, with inconsistent retention of the specific messages. This points to a visibility and engagement gap. To bridge this, the campaign must adopt a diversified media strategy. While online platforms remain essential, especially for younger audiences, there must be complementary outreach through television, radio, local newspapers, and community-based events. Community spaces such as libraries, mosques, churches, schools, and supermarkets can serve as dissemination hubs for preparedness materials. Germany's Federal Office for Civil Protection and Disaster Assistance (BBK) provides a compelling model, offering multilingual guides and visual materials in public buildings and transport hubs to increase visibility and accessibility (Hoey, 2024).

While quantitative data showed that general trust in government is not a significant predictor of preparedness, qualitative responses indicate that trust in specific messengers, such as local leaders, teachers, or health professionals, remains influential. Therefore, future iterations of Denk Vooruit should involve a broader range of messengers: local mayors, emergency responders, community leaders, and even influencers who resonate with specific demographic groups. These individuals can help bridge the psychological distance between official campaigns and everyday citizens. Two-way communication, including Q&A sessions, community forums, and interactive social media engagement, should be employed to create dialogue rather than merely broadcasting information.

Yet communication alone cannot resolve all barriers to preparedness. This thesis also highlights structural and socioeconomic constraints that prevent individuals from taking recommended actions. Financial barriers were mentioned frequently, particularly in relation to purchasing emergency supplies or backup power sources.

Moreover, income is significantly related to preparedness behavior. To address this, local and national authorities could subsidize emergency kits for low-income households or partner with retailers to offer discounted preparedness bundles. Municipalities could also organize annual kit distribution events during National Preparedness Week, mirroring practices in other European countries. These initiatives lower practical barriers while normalizing preparedness behaviors across socioeconomic groups. At the same time, education offers a powerful long-term strategy to address these structural inequalities and ensure that preparedness knowledge reaches all citizens, regardless of their background. Integrating crisis preparedness into school curricula through geography, civic education, or health classes can instill resilience early on and equip students with the practical skills to act. Activities might include assembling mock emergency kits, role-playing evacuation scenarios, or inviting emergency service personnel to speak at schools. By learning these behaviors in

an inclusive, public setting, children from all socioeconomic groups gain access to critical knowledge without relying solely on household resources. Moreover, students can act as preparedness ambassadors within their families, spreading awareness and encouraging action at home. In parallel, adult-focused training opportunities such as first aid workshops, community drills, or e-learning modules should be promoted to ensure that preparedness education is sustained across all age groups. The UK's Resilience Academy initiative provides a compelling model for how governments can build public-facing platforms that combine skill development with awareness building (Grierson, 2023).

Institutional coordination is another area where improvement is necessary and feasible. The Inspectorate of Justice and Security (2025) identified fragmentation in risk communication efforts across government levels. A national preparedness framework should be formalized, with the NCTV at the helm, but with close coordination with Veiligheidsregio's and municipalities. Such a framework would define unified messages while allowing regional customization based on local risk profiles. Furthermore, all government websites should link directly to Denk Vooruit, ensuring citizens encounter preparedness content in every digital government touchpoint. Germany's BBK model again offers an example of effective coordination between federal and regional bodies, maintaining message consistency while respecting subsidiarity (BBK, 2024).

Another promising strategy is the formal inclusion of community organizations and volunteers in the preparedness ecosystem. Local NGOs, neighborhood associations, and religious communities can co-develop materials and host awareness events. A national registry of preparedness volunteers, akin to the Burgerhulpverlener network for cardiac arrest, could be expanded to include broader crisis roles. These volunteers could distribute materials, offer training, or support at-risk populations during emergencies. Public-private partnerships should also be leveraged: supermarkets could highlight preparedness products, utility companies could include preparedness tips in billing communication, and employers could be encouraged to include household preparedness in their workplace safety programs. These networked approaches distribute responsibility while amplifying campaign impact.

Finally, sustainability and evaluation must be embedded into policy design. Public engagement often wanes in the absence of acute crises, yet it is precisely during "peacetime" that the most effective preparation occurs. The Denk Vooruit campaign must be institutionalized with long-term funding, permanent staffing, and a clear mandate. This includes ongoing monitoring of preparedness levels, public awareness, and behavioral outcomes through surveys like the Risico- en Crisisbarometer (Ministerie van Justitie en

Veiligheid, 2021). Feedback mechanisms, e.g., post-campaign evaluations or community consultations, should inform iterative improvements. Moreover, the content of preparedness advice must evolve with the threat landscape. Cyberattacks, misinformation, and climate-related events are increasingly prominent, and public guidance should be regularly reviewed and updated. An annual government “state of preparedness” report, akin to the UK’s resilience statement, could maintain political and public attention on this issue (Grierson, 2023). These recommendations address the final part of sub-question 3 by linking the tested hypotheses to actionable policy.

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Appendices:

Appendix A: Key Studies on Risk Perception and Behavior

Author(s), Year	Country / Context	Method	Theory / Model	Independent Variables (IVs)	Dependent Variables (DVs)	Key Findings	Direction / Strength of Effect
Slovic (2016)	USA / Industrialized countries	Theoretical review + psychometric analysis	Psychometric Paradigm	Dread risk, Unknown risk, Voluntariness, Control, Familiarity	Risk perception, Risk acceptability	Risk perception is shaped more by qualitative aspects (e.g., dread, unfamiliarity) than statistical risk. Experts and laypeople conceptualize 'risk' differently.	Higher dread and unfamiliarity are associated with higher perceived risk. No statistical coefficients reported.
Slovic & Peters (2006)	USA / General public	Theoretical review + experimental studies	Affect Heuristic; Dual-Process Theory	Affect (emotions), risk/benefit framing, time pressure	Risk perception; risk-benefit judgments	People use emotions to judge risks. Positive feelings reduce perceived risk and increase perceived benefit. Negative feelings increase perceived risk and decrease benefit. Time pressure amplifies these effects.	Positive affect leads to lower risk perception; negative affect leads to higher risk perception. Risk and benefit perceptions are inversely related. No effect sizes reported.
Wilson, Zwickle, & Walpole (2019)	USA / General hazards (4 types)	Survey (N=296); factor analysis + regressions	Tripartite Risk Perception Model	Dimensions of risk perception (affect, probability, consequences); hazard types	General risk perception; behavioral intentions	Risk perception includes emotional and cognitive elements. Affect and perceived consequences are better predictors than perceived probability. Affect is the strongest predictor of both perception and behavior.	Affect positively predicts risk perception and behavioral intent ($\beta = .34-.43$). Perceived consequences also contribute ($\beta = .23-.38$). Probability was only significant in 2 of 4 hazards. Models explain 32%–55% of variance ($R^2 = .32-.55$).
Kievik & Gutteling (2011)	Netherlands / Flood risk	2x2 Experimental design (N=726); ANOVA + mediation analysis	FRIS (Risk Info Seeking) + EPPM (Extended Parallel Process)	Manipulated: Risk perception (high vs. low), Efficacy beliefs (high vs. low)	Information seeking; self-protective intention	High perceived risk and strong efficacy beliefs increase both actual and intended information seeking and	Risk perception significantly increases information seeking ($\beta = .47$), which in turn increases intention ($\beta = .11$). Efficacy

						intention to take preventive action. Information seeking partly mediates the relationship between risk/efficacy beliefs and behavioral intentions.	beliefs also significantly increase info seeking ($\beta = .53$) and preventive intentions ($\beta = .41$). Mediation confirmed via Sobel test ($Z = 11.25$; 16.09). R^2 not reported.
Appleby-Arnold, Brockdorff, & Callus (2021)	Portugal and Netherlands / Urban disaster preparedness	Mixed-methods: 2 Citizen Summits using surveys + qualitative focus groups	Citizen summits (quantitative surveys + focus groups)	Cultural Preparedness / Everyday-life Preparedness	Preparedness perception, behavior intention	Preparedness improves when tied to daily routines, community activities, and existing personal skills. Trust and shared identity also matter.	No β values reported; strong support for key strategies indicated by “++” qualitative ratings in both study locations.
Haunschild et al. (2024)	Germany / Household crisis preparedness	Survey (N=30) + Semi-structured interviews	Values-Beliefs-Norms (VBN) Theory	Personal values (e.g. benevolence), beliefs, personal and social norms	Crisis preparedness score (based on supplies, knowledge, actions)	Higher benevolence values significantly associated with greater preparedness. Minor group differences in norms and beliefs. Crisis preparation seen as pro-social but ‘excessive’ prepping viewed negatively.	Benevolence positively predicts preparedness ($r = -.39$, $p < .05$). Other values ns. Norms and beliefs influence perceptions but not clearly behavior.
Paton (2007)	Australia and New Zealand (bushfire, earthquake, and volcanic risk)	Two cross-sectional studies using surveys (sample sizes ranged from 281 to 352), multiple regression analyses, and interviews	Multi-level Trust Model (Kee and Knox, 1970; Mayer et al., 1995)	Study One: Hazard familiarity, Information availability, Trust in civic agencies, Action coping, Critical awareness, Outcome expectancy. Study Two: Community participation, Empowerment, Ability to articulate problems	Preparedness intentions	Study One found that trust in civic agencies was a significant predictor of preparedness intentions in low-familiarity and low-information contexts (volcanic and earthquake), but not in high-familiarity/high-information context (bushfire). Study Two found that empowerment and the ability to articulate problems predicted	In Study One: Trust significantly predicted preparedness in low-familiarity contexts (volcanic: beta equals 0.21, earthquake: beta equals 0.17). Trust was not significant for bushfire. In Study Two: Empowerment (beta equals 0.37) and articulating problems (beta equals 0.35) predicted trust. Together

						higher levels of trust. Community participation was not a significant predictor.	these variables explained 27 percent of the variance in trust. Community participation had no significant effect.
Witte & Allen (2000)	Meta-analysis of fear appeals in public health (USA and broader context)	Meta-analysis of 98 studies; effect sizes and moderator analyses	Extended Parallel Process Model (EPPM), Protection Motivation Theory (PMT), SEU models, Drive Theory, Parallel Process Models	Fear, perceived threat (severity, susceptibility), perceived efficacy (response efficacy, self-efficacy)	Attitudes, intentions, behavior change; defensive responses (e.g., denial, avoidance, reactance)	Stronger fear appeals lead to greater perceived threat (severity and susceptibility). High-threat messages are more persuasive when paired with high-efficacy messages. Without efficacy, fear appeals can backfire and induce defensive responses. No evidence supports curvilinear effects. EPPM explains danger vs. fear control processes. Additive models best fit outcomes.	Fear to attitudes $r = 0.14$, intentions $r = 0.11$, behavior $r = 0.15$. Fear appeals also increased defensive responses ($r = 0.20$). Perceived efficacy negatively related to fear control responses ($r = -0.11$). Response/self-efficacy $r \approx 0.13-0.18$ with positive outcomes.
Lahiri et al. (2021)	India / COVID-19 pandemic	Online cross-sectional survey (N=2,646); Poisson regression models with robust cluster-adjusted SEs)	Protection Motivation Theory (PMT)	Threat appraisal (perceived severity, perceived vulnerability), coping appraisal (self-efficacy, response efficacy), socio-demographics, information sources, and co-occurrence of other preventive behaviors	Six COVID-19 preventive behaviors: handwashing with soap, using hand sanitizer, wearing a mask, avoiding face-touching, covering mouth while sneezing/coughing, physical distancing	Self-efficacy was the strongest and most consistent predictor of preventive behavior. Response efficacy was only significantly associated with sanitizer use. Perceived vulnerability and severity showed mixed effects. Behaviors were synergistically associated with each other. Information from health personnel	Self-efficacy had strong effects on behavior (e.g., $\beta = 2.87$ for sanitizer use, $\beta = 2.52$ for elbow cough/sneeze). Threat appraisal variables had moderate or inconsistent effects (e.g., $\beta = 1.21$ for higher vulnerability and sanitizer use; $\beta = 0.94$ for higher comparative

						increased adoption.	vulnerability and mask use). Co-occurrence of behaviors also significantly predicted adoption of others (e.g., mask use $\beta = 1.13 \rightarrow$ elbow cover; sanitizer use $\beta = 1.73 \rightarrow$ mask use).
Kerstholt (2014)	Netherlands / National security and crisis preparedness	Theoretical review + applied examples (e.g., campaigns, serious games, built environment)	Dual-process model of decision-making (Haidt's Elephant and Rider metaphor)	Type of cognitive engagement (intuitive vs. analytical), campaign framing, environmental design, serious game use, values awareness	Preparedness behavior, intuitive awareness, self-reliance in crises	Intuitive thinking (the "elephant") dominates daily behavior. Campaigns appealing to analytical thinking (the "rider") are often ineffective. Behavior change is more likely when the intuitive system is engaged, e.g., through serious games or environment design. Values reflection also aids alignment of behavior with internal motivations.	Campaigns focused only on rational info (e.g., "Denk Vooruit") failed to change behavior. Serious game B-SaFe! increased risk awareness. Built environments aligned with natural behavior (e.g., exit routes) improve outcomes. No β values reported; conclusions are theoretically and observationally supported.
Poortinga & Pidgeon (2003)	UK / Government trust in regulation of five risk cases (e.g., GM food, genetic testing, etc.)	National survey (N=1,547; 5 risk contexts); PCA + multiple regressions	Dimensionality of Trust; Salient Value Similarity (SVS) model	Evaluations of government (competence, fairness, care, openness), scepticism (e.g., distortion, inconsistency), perceived value similarity	Trust in risk regulation	Trust is best explained by two main factors: general trust (competence + care) and scepticism (perceived vested interests). Value similarity added little predictive power overall, but had more influence in low-familiarity or	General trust strongly predicts trust in regulation ($\beta = .38-.59$). Scepticism negatively predicts trust ($\beta = -.16$ to $-.39$). Value similarity adds small to moderate predictive value in some contexts ($\beta = .20-.26$), especially for newer/polariz

						polarized cases (e.g., genetic testing, GM food).	ed risks. $R^2 = 19\%–54\%$.
Dong et al. (2024)	China / Wuhan flood risk	Survey (N = 1,254); path analysis and mediation modeling	Adaptive Flood Risk Governance Model; draws on elements from trust theory, risk communication theory, and protection motivation theory	Trust in public flood protection capacity; Risk communication; Flood risk perception	Flood risk perception; Flood preparedness intention	Flood risk perception significantly increases preparedness intention. Trust increases risk perception (contrary to prior theory). Risk communication increases preparedness intention and trust but has no direct effect on risk perception. Trust partially mediates through perception; communication does not.	H1: Flood risk perception → preparedness intention ($\beta = .046, p = .022^{**}$)
Grothmann & Reusswig (2006)	Germany / Cologne flood-prone households	Telephone survey (N = 157); hierarchical logistic regression	Protection Motivation Theory (PMT), extended with contextual variables	Threat experience appraisal; Threat appraisal; Coping appraisal (response efficacy, self-efficacy, cost); non-protective responses (denial, fatalism, wishful thinking); Reliance on public flood protection	Four types of precautionary behavior: information seeking, avoidance of expensive furnishings, purchase of flood devices, structural adaptations	PMT-based socio-psychological model predicted precautionary behaviors better than socio-economic models. Key predictors were threat experience, coping appraisal, and non-protective responses. Fear was not a significant predictor. Reliance on public protection reduced private action.	Socio-psychological model explained 26–45% of variance (Nagelkerke $R^2 = .26–.45$) Threat experience appraisal → Info (B = .43***), Avoidance (B = .35***), Devices (B = .38***), Structures (B = .52***)
Wiese & Van Der Westhuizen, 2023	South Africa / Government-imposed COVID-19 lockdown (Levels 4 & 5)	Online survey (N=371), Structural Equation Modeling (AMOS)	Alienation Theory, Crisis Coping Strategies (Pearlin & Schooler, 1978)	Perceived Powerlessness (Power), Quality of Life (QoL)	Crisis coping strategies: Information-sharing, Negative Word-of-Mouth (WOM), Support-seeking	Power positively predicted QoL. QoL positively predicted adaptive coping (information-sharing,	Power → QoL: $\beta = .493^{**}$ QoL → Information-sharing: $\beta = .128^{**}$ QoL → Negative

						support-seeking) and negatively predicted maladaptive coping (negative WOM). QoL mediated power-coping relationships.	WOM: $\beta = -.155^{**}$ QoL $\rightarrow$ Support-seeking: $\beta = .229^{**}$ Mediation (Power $\rightarrow$ QoL $\rightarrow$ coping): Info-sharing: $\beta = .063^{**}$ Negative WOM: $\beta = -.076^{**}$ Support-seeking: $\beta = .113^{**}$
Van Oudenhoven, 2025	Netherlands / Government call for civil resilience amid crises (e.g., war, energy, COVID-19)	Policy commentary based on existing research	Social capital theory, resilience theory, community coping models	Social trust, community connectedness, diversity of networks, crisis framing	Community resilience, solidarity, recovery capacity	Resilient communities with cross-group trust and reciprocal relationships respond more creatively and recover faster. Overemphasis on individual resilience risks undermining solidarity. Crises can form bridging networks across group lines.	Qualitative insights, no betas reported; key mechanism is trust $\rightarrow$ solidarity $\rightarrow$ adaptive collective coping. Research cited shows interconnected diverse communities recover faster.
Earle & Siegrist, 2008	USA (Washington State) & Switzerland (German-speaking region) / Environmental risk management	Survey-embedded experimental design (2x2x2 factorial)	TCC model (Trust–Confidence–Cooperation); contrasted with standard procedural fairness model	Issue importance (high/low), procedural fairness (fair/unfair), policy outcome (risk-averse/accepting)	Trust, perceived fairness, cooperation	Procedural fairness only influenced trust and cooperation when issue importance was low. When issue importance was high, policy outcome (not process fairness) drove trust and cooperation. Results replicated in both countries.	ANOVA results: e.g., in high-importance US condition: trust $\eta^2 = .10$, cooperation $\eta^2 = .14$. In low-importance: procedural fairness effect on trust $\eta^2 = .02$.
Seeger et al. (2018)	USA / CDC & Public Health Emergencies	Conceptual model development; literature review, interviews,	Emergency Risk Communication (ERC) Evaluation Model	ERC process constructs (e.g., scientific accuracy, message clarity,	ERC outcomes (e.g., reach, awareness, self-efficacy, behavior change)	Identifies 9 process and 9 outcome constructs; shows how internal communication	No statistical coefficients; model is conceptual. Strong directional

		stakeholder consultation		timeliness, tailoring)		n processes (e.g., clear, consistent, tailored messaging) influence trust, self-efficacy, and ultimately behavior during emergencies	logic described between constructs (e.g., tailored + actionable messages → increased self-efficacy → behavior change)
Griffin, Dunwoody, & Neuwirth (1999)	USA / Health risk communication (conceptual model for preventive behavior)	Theoretical model development + literature synthesis	Risk Information Seeking and Processing (RISP) Model (integrates Heuristic-Systematic Model and Theory of Planned Behavior)	Individual characteristics, perceived hazard characteristics, affective response, subjective norms, information sufficiency, perceived information-gathering capacity, relevant channel beliefs	Risk information seeking (routine/nonroutine); processing (heuristic/systematic); preventive behavioral intentions and stability	Model proposes that information seeking and processing styles (influenced by motivation and capacity) mediate the relationship between risk perceptions and stable preventive behavior. Systematic processing leads to more stable behavioral attitudes and actions. Affective responses (e.g., worry) and social norms increase information sufficiency gap, motivating deeper processing.	Conceptual, no statistical coefficients. Theoretically strong directional logic: information sufficiency + perceived capacity + trust in channels → greater systematic processing → stable behavioral intention.
He et al. (2023)	China (Wenchuan & Lushan earthquake-affected areas)	Survey (N = 327), 2SLS with instrumental variables	Peer Effects Theory: Convergence Effect & Social Learning Effect	Peer household preparedness (D1b, HRb, IPb, RPB); Opinion leader preparedness (D1d, HRd, IPd, RPD)	Household disaster preparedness: Insurance (D1a), House Reinforcement (HRA), Items Placement (IPa), Relocation (RPa)	Peer effects strongly influence all four preparedness behaviors via convergence: social learning significant for 3 behaviors (not relocation)	D1b → D1a: $\beta = .897^*$ HRb → HRA: $\beta = .748^{**}$ IPb → IPa: $\beta = 1.225^{***}$ RPb → RPa: $\beta = .707^*$ D1d → D1c: $\beta = .605^{***}$ HRd → HRC: $\beta = .188^*$ IPd → IPC: $\beta = .187^*$ RPd → RPC: NS

Fegg et al. (2005)	Germany / Palliative care (Cancer & ALS)	Survey (PVQ) + semi-structured interview (SEIQoL-DW); N=64 (36 cancer, 28 ALS); comparative + correlational	Schwartz's Value Theory	Value dimensions: Self-transcendence (benevolence, universalism), Self-enhancement (power, achievement, hedonism), Conservation (security, conformity, tradition), Openness to change (self-direction, stimulation)	Individual Quality of Life (iQoL; SEIQoL-DW index)	Self-transcendence values were universally higher than self-enhancement values. Conservation values (tradition, conformity, security) correlated positively with higher iQoL. No significant differences in values between ALS and cancer patients. Compared to healthy adults, patients rated benevolence higher and power, achievement, hedonism lower.	Conservation → higher iQoL: SEIQoL-DW index = 68.0 (vs. openness to change = 58.3), $p = .03$. Age positively correlated with conservation values ($p = .55$, $p < .001$). Education positively associated with self-transcendence ($p = .27$, $p = .03$), and negatively with openness to change ($p = -.35$, $p = .01$). No stats for self-transcendence ↔ iQoL due to uniform high scores.
Najafi et al. (2017)	Iran / Urban population of Tehran	Cross-sectional survey (N=1233); TPB questionnaire + DPB self-report; Structural Equation Modeling (SEM)	Theory of Planned Behavior (TPB)	Attitudes toward DPB, Subjective norms, Perceived behavioral control, Demographics (e.g., income, experience)	Intentions to perform DPB; actual DPB behavior	TPB successfully predicted intentions and behaviors related to disaster preparedness. Attitudes, subjective norms, and perceived control significantly predicted intention ($R^2 = 56.3\%$ in unprepared group). For prepared people, TPB explained 62.8% of behavior variance. Perceived behavioral control influenced actual behavior only among those with strong intentions. Past behavior	Unprepared group: Attitudes, norms, and perceived control → Intention ($R^2 = 56.3\%$). Intention + control → Behavior ($R^2 = 10.5\%$). Prepared group: Same predictors → Intention ($R^2 = 32.0\%$); Intention + control → Behavior ($R^2 = 62.8\%$). Significant group differences found: Prepared group scored higher in all TPB constructs ($p < .001$).

						directly influenced intention beyond TPB variables.	PBC– behavior link was nonsignificant in unprepared group but strong in prepared group.
Paton & Johnston, 2001	General (Disasters and communities)	Theoretical discussion	Community Resilience Model	Vulnerability, social networks, sense of community, coping strategies	Preparedness, resilience	Resilience is a function of self-efficacy, community support, and coping styles. These factors enhance the ability to manage and recover from hazard events.	Positive relationship between community factors (e.g., self-efficacy, coping) and resilience to hazard events.
Rogers, 1975	USA (General context of fear appeals)	Theoretical analysis	Protection Motivation Theory	Magnitude of noxiousness, probability of occurrence, efficacy of response	Attitude change, intention to act, behavioral intentions	Protection motivation is aroused when an event is perceived as severe, likely to occur, and preventable. These cognitive appraisals mediate attitude change.	Higher magnitude of noxiousness, greater probability, and more efficacy lead to stronger protection motivation, which enhances attitude change.
Ajzen, 1991	USA (General context of human behavior prediction)	Theoretical review and empirical studies	Theory of Planned Behavior (TPB)	Attitude toward the behavior, subjective norm, perceived behavioral control, past behavior	Behavioral intention, actual behavior (e.g., job search, weight loss, leisure activities)	The TPB posits that intentions, shaped by attitudes, subjective norms, and perceived behavioral control, are strong predictors of behavior. Past behavior also plays a significant role in predicting future behavior.	Intentions and perceived behavioral control jointly predict behavior. Past behavior has a notable residual effect on future actions when the model doesn't fully account for all behavior determinants.

Appendix B: Survey Instrument (First English explanation, following with the Dutch accurate instrument)

Risk Perception Scale

Adapted from Ho et al. (2008), this 7-item scale measures individuals' perceptions of risk related to major crises such as cyberattacks, energy blackouts, and extreme weather events. Items assess perceived likelihood, preparedness knowledge, perceived controllability (reversed), perceived impact on daily life, emotional dread, threat to life, and anticipated financial loss. Responses were collected on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree).

Example items:

- "I believe a major crisis is likely to occur in the Netherlands within the next five years." (Likelihood)
- "I am aware of what actions I can take to protect myself and my household during a crisis." (Knowledge of mitigation actions)
- "I believe that personal actions cannot reduce the consequences of a crisis."
(Perceived controllability – reversed)

Efficacy Beliefs Scale

Based on Protection Motivation Theory (Rogers, 1975) and recent adaptations by Qiu et al. (2023), this 3-item scale measures self-efficacy and response efficacy related to crisis preparedness. Items are scored on a 5-point scale ranging from 0 (Not at all confident) to 4 (Extremely confident).

Example items:

- "How confident are you that you can take steps to prepare for a crisis in your area?"
(Self-efficacy)
- "To what extent do you believe that taking preparedness actions (e.g., assembling an emergency kit) will help you get through a crisis?" (Response efficacy)
- "I believe that personal preparation does not make a real difference during a disaster."
(Reversed)

Trust in Government for Crisis Management

Adapted from the Trust in Government Measure (Burns et al., 2023), this 12-item scale captures public trust in government performance during crises, emphasizing the dimensions

of competence, integrity, transparency, reliability, and fairness. Items were adapted to explicitly refer to crisis situations (e.g., pandemics, disasters) and scored on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree).

Example items:

- "The government demonstrates good judgment during crises." (Competence)
- "During emergencies, the government acts in the best interest of citizens." (Integrity)
- "In crisis situations, the government communicates openly and transparently with citizens." (Transparency)
- "The government treats all citizens fairly during emergency responses." (Fairness)
- "The government prioritizes its own interests above those of citizens during crises." (Reversed)

Denk Vooruit Campaign Awareness Scale

To assess campaign awareness and exposure, a three-item scale and a media checklist were developed, adapted from typical public communication evaluation methods.

- "I have heard about the 'Denk Vooruit' campaign." (5-point agreement scale)
- "I can recall the main messages of the 'Denk Vooruit' campaign." (5-point agreement scale)
- "I believe that the 'Denk Vooruit' campaign is an official government initiative." (5-point agreement scale)

Media exposure was assessed by asking respondents to select all applicable sources from a checklist (TV, radio, social media, flyers, government website, events, word of mouth, or no exposure).

Preparedness Behavior Scale

Adapted from Haunschild et al. (2024), this 7-item index measures household preparedness across key domains relevant to crisis resilience. Items were adapted to match Dutch governmental guidelines and the "Denk Vooruit" campaign focus areas. Responses were collected on a 4-point ordinal scale reflecting increasing levels of preparedness (0–3 points).

Dimensions include:

- Food Supply Preparedness (Number of days of food available)
- Water Supply Preparedness (Number of days of drinking water available)
- Energy and Communication Access (Availability of emergency resources like flashlights, radios, or power banks)

- First Aid and Medical Preparedness (Presence of first aid kits, essential medications, and training)
- Fire Protection and Emergency Supplies (Availability of fire blankets, extinguishers, emergency bags, and secure document storage)

Dutch Survey

Blok 1 – Informed Consent

Meet geen theoretische variabele – ethische toestemming

Introductie & Toestemming

Voor mijn MSc Public Governance, Management and Policy aan de Erasmus Universiteit Rotterdam doe ik onderzoek om te begrijpen hoe mensen in Nederland omgaan met crisisvoorbereiding, en in hoeverre factoren zoals risicoperceptie, vertrouwen in de overheid en bekendheid met de ‘Denk Vooruit’-campagne hierop van invloed zijn. Bedankt dat je de tijd neemt om deel te nemen aan dit onderzoek. Je krijgt een aantal vragen over jouw mening, ervaringen en eventuele voorbereidingen op noodsituaties. Deelname is volledig vrijwillig en je antwoorden worden volledig anoniem verwerkt. Je kunt op elk moment stoppen zonder gevolgen. Heb je vragen of opmerkingen? Neem dan gerust contact met mij op via e-mail: 560545is@eur.nl

Vraag: Geef je aan dat je instemt met deelname aan dit onderzoek?

☐ Ja, ik stem in

Blok 2 – Demografie

Meet: Demografische controlevariabelen

1. Wat is je leeftijd? (*open numeriek veld*)
2. Wat is je geslacht?
 - ☐ Man
 - ☐ Vrouw
 - ☐ Anders
 - ☐ Wil ik liever niet zeggen

3. Wat is je hoogst afgeronde opleiding?
- ☐ Basisonderwijs
 - ☐ VMBO/MBO
 - ☐ HAVO/VWO
 - ☐ HBO/WO bachelor
 - ☐ WO master/PhD
4. In wat voor omgeving woon je?
- ☐ Stedelijk
 - ☐ Landelijk
 - ☐ Tussenin
5. Wat is je geschatte maandelijks netto inkomen?
- ☐ < €1.500
 - ☐ €1.500–€2.500
 - ☐ €2.500–€3.500
 - ☐ > €3.500
 - ☐ Wil ik niet zeggen

Blok 3 – Risicoperceptie

Meet: Risk perception (Ho et al., 2008)

Antwoordschaal: 1 = Helemaal oneens tot 5 = Helemaal eens

6. Ik denk dat de kans groot is dat er binnen 5 jaar een ernstige crisis plaatsvindt in Nederland.
(Likelihood)
7. Ik ben op de hoogte van welke maatregelen ik zelf kan nemen bij een crisis.
(Knowledge of mitigation actions)
8. Ik geloof niet dat ik persoonlijk iets kan doen om mij voor te bereiden op een crisis.
(omkeren voor analyse)

(Perceived controllability – reversed)

9. Als er een crisis zou plaatsvinden, zou dat mijn dagelijks leven sterk beïnvloeden.

(Impact on quality of life)

10. De gedachte aan mogelijke crisissituaties maakt me onrustig of angstig.

(Emotional dread)

11. Een ernstige crisis zou mijn leven of dat van mijn dierbaren in gevaar kunnen brengen.

(Threat to life)

12. Een ernstige crisis zou waarschijnlijk leiden tot grote financiële schade voor mij of mijn gezin.

(Financial loss)

Blok 4 – Efficacy Beliefs

Meet: Self-efficacy & response efficacy (PMT, Qiu et al., 2023)

Antwoordschaal: 0 = Helemaal niet zeker, 1 = Niet zo zeker, 2 = Enigszins zeker, 3 = Vrij zeker, 4 = Zeer zeker

Zelfeffectiviteit (Self-efficacy):

11. Vraag 1:

Hoe zeker ben je dat je zelf stappen kunt zetten om je goed voor te bereiden op een crisis in jouw omgeving?

Respons-effectiviteit (Response efficacy):

12. Vraag 2:

In hoeverre denk je dat maatregelen zoals het aanleggen van een noodvoorraad of het maken van een noodplan écht helpen om goed door een crisis te komen?

Negatief geformuleerd item (Reversed):

13. Vraag 3 (omgekeerd):

Ik geloof niet dat persoonlijke voorbereiding veel uitmaakt tijdens een ramp.

Blok 5 – Vertrouwen in de Overheid (include nog 1 reversed)

Meet: Trust in government (Burns et al., 2023)

Antwoordschaal: 1 = Helemaal oneens tot 5 = Helemaal eens

Antwoordschaal: 1 = Helemaal oneens, 5 = Helemaal eens

1. De overheid stelt haar eigen belangen boven die van burgers in tijden van crisis.
(Reversed).
2. In crisissituaties toont de overheid goed beoordelingsvermogen.
3. Bij noodsituaties toont de overheid oprechte betrokkenheid bij het welzijn van burgers.
4. In tijden van crisis communiceert de overheid eerlijk en transparant met burgers.
5. De overheid neemt in crisistijden beslissingen die burgers daadwerkelijk helpen.
6. De overheid houdt bij crisismaatregelen rekening met de autonomie van burgers.
7. Als burgers hulp nodig hebben tijdens een crisis, doet de overheid haar uiterste best om te helpen.
8. De overheid doet tijdens crisissituaties alles wat nodig is om de bevolking te beschermen.
9. De overheid beschikt over voldoende expertise om het land door crises te leiden.
10. Tijdens crisissen werkt de overheid op een open en transparante manier.
11. De overheid komt haar beloften na, ook tijdens crisissituaties.
12. De overheid communiceert effectief met burgers tijdens noodsituaties.

Blok 6 – Campagnebewustzijn ('Denk Vooruit')

Meet: Awareness & perception of campaign

19. Ik heb gehoord van de ‘Denk Vooruit’-campagne.
20. Ik kan me de belangrijkste boodschap van deze campagne herinneren.
21. Ik geloof dat ‘Denk Vooruit’ een officiële overheidsactie is.
22. Via welke kanalen heb je over de campagne gehoord? *(meerdere opties mogelijk)*
- ☐ TV
 - ☐ Radio
 - ☐ Social media
 - ☐ Overheidssite
 - ☐ Flyers/brochures
 - ☐ Gemeentelijke bijeenkomst of evenement
 - ☐ Via vrienden/familie
 - ☐ Ik heb er nog nooit van gehoord

Blok 7 – Voorbereidingsgedrag

Meet: Household preparedness behavior (Haunschild et al., 2024)

Antwoordschaal per item: 0–3 punten

23. Hoeveel dagen eten heb je in huis als je geen boodschappen zou kunnen doen?
- ☐ 0–2 dagen
 - ☐ 3–6 dagen
 - ☐ 7–9 dagen
 - ☐ 10+ dagen
24. Hoeveel dagen drinkwater heb je beschikbaar als de kraan geen water meer geeft?
- ☐ 0–2 dagen
 - ☐ 3–6 dagen

☐ 7–9 dagen

☐ 10+ dagen

25. Welke middelen heb je om te koken, verwarmen of licht te hebben bij een stroomuitval (bijv. gaspitje, kaarsen)?

☐ Geen

☐ 1 middel

☐ 2 middelen

☐ 3 of meer middelen

26. Welke middelen (bijv. zaklamp, powerbank) heb je voor stroomuitval of communicatieproblemen?

☐ Geen

☐ 1 middel

☐ 2 middelen

☐ 3 of meer middelen

27. Wanneer heb je voor het laatst een EHBO-cursus gevolgd?

☐ Nooit of langer dan 5 jaar geleden

☐ 2–5 jaar geleden

☐ Minder dan 2 jaar geleden

☐ Minder dan 6 maanden geleden

28. Heb je een EHBO-doos in huis?

☐ Nee

☐ Ik weet het niet

☐ Ja, maar incompleet

☐ Ja, volledig en makkelijk bereikbaar

29. Heb je essentiële medicijnen (bijv. anticonceptie, pijnstillers etc.) voor jezelf of je huishouden beschikbaar?

- ☐ Nee
- ☐ Alleen voor 1 persoon
- ☐ Voor meerdere personen
- ☐ Voor hele huishouden + reservevoorraad

30. Wat heb je voor brandveiligheid of snelle evacuatie?

- ☐ Geen
- ☐ Brandblusmiddel (blusdeken of brandblusser) of noodpakket (bijv. vluchttas)
- ☐ Beide
- ☐ Beide + veilige opslag van belangrijke documenten

Meet geen variabele – aanvullende kwalitatieve reflectie

30. Wil je nog iets kwijt over hoe jij je voorbereidt op crisissituaties, of over hoe de overheid daarin zou kunnen ondersteunen?

Appendix C: Outputs

C1. Reliability analysis

Variable	n	Cronbach's Alpha
Risk Perception (after removing items 2 & 3)	5	.692
Trust in Government	12	.924
Campaign Awareness	3	.840
Efficacy Beliefs	3	.548
Preparedness Behavior	8	.745

C2. Frequencies

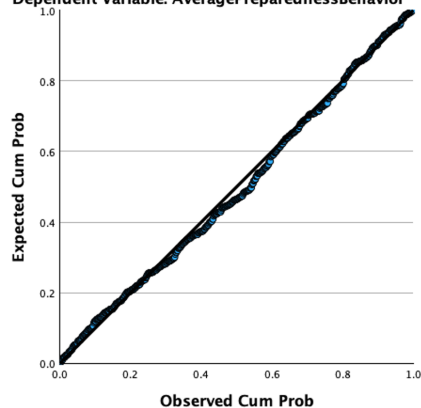
Variable	Sample size	Possible answers	n	%
Gender	603	1 (Man)	173	28.7
		2 (Woman)	428	71.0
		3 (Other)	2	0.3
Education	603	1 (Primary/secondary school)	7	1.2
		2 (High school - vocational)	117	19.4
		3 (High school - academic)	135	22.4
		4 (Bachelor's degree)	225	37.3
		5 (Master's/Doctorate)	119	19.7
Area (Rural/Urban)	603	1 (Urban)	290	48.1
		2 (Suburban)	92	15.3

Income	603	3 (Rural)	221	36.7
		1 (Lowest)	171	28.4
		2	102	16.9
		3	160	26.5
		4	138	22.9
Age	599	5 (Highest)	32	5.3
		≤20	49	8.2
		21–30	233	38.9
		31–40	106	17.7
		41–60	170	28.4
		61+	41	6.8

C3. Outputs assumption checks

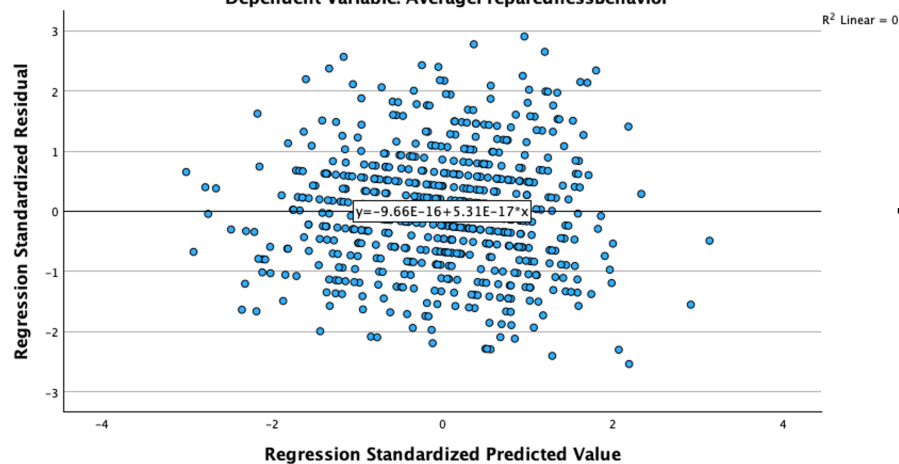
Normal P-P Plot of Regression Standardized Residual

Dependent Variable: AveragePreparednessBehavior



Scatterplot

Dependent Variable: AveragePreparednessBehavior



Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.149 ^a	.022	.017	.56989

a. Predictors: (Constant), AverageTrustInGov, AverageRiskPerception, AverageEfficacyBeliefs

b. Dependent Variable: AveragePreparednessBehavior

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.419	3	1.473	4.536	.004 ^b
	Residual	194.539	599	.325		
	Total	198.958	602			

a. Dependent Variable: AveragePreparednessBehavior

b. Predictors: (Constant), AverageTrustInGov, AverageRiskPerception, AverageEfficacyBeliefs

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	2.075	.182		11.396	<.001					
	AverageRiskPerception	-.032	.038	-.035	-.861	.390	-.023	-.035	-.035	.994	1.006
	AverageEfficacyBeliefs	.120	.033	.150	3.620	<.001	.138	.146	.146	.955	1.047
	AverageTrustInGov	-.038	.034	-.046	-1.124	.261	-.017	-.046	-.045	.961	1.041

a. Dependent Variable: AveragePreparednessBehavior

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	(Constant)	Variance Proportions		
					AverageRiskP erception	AverageEfficac yBeliefs	AverageTrustl nGov
1	1	3.907	1.000	.00	.00	.00	.00
	2	.047	9.153	.01	.18	.02	.79
	3	.034	10.652	.01	.24	.82	.06
	4	.012	18.264	.98	.58	.16	.14

a. Dependent Variable: AveragePreparednessBehavior

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.0020	2.5284	2.2597	.08568	603
Residual	-1.44747	1.65785	.00000	.56847	603
Std. Predicted Value	-3.008	3.135	.000	1.000	603
Std. Residual	-2.540	2.909	.000	.998	603

a. Dependent Variable: AveragePreparednessBehavior

C4. Regression model 1-3

Model 1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.366 ^a	.134	.127	.93686830

a. Predictors: (Constant), Income_dummy, AreaLiving_Dummycorrect, Edu_dummy, Gender, Age

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	80.469	5	16.094	18.336	<.001 ^b
	Residual	520.489	593	.878		
	Total	600.959	598			

a. Dependent Variable: Zscore(AveragePreparednessBehavior)

b. Predictors: (Constant), Income_dummy, AreaLiving_Dummycorrect, Edu_dummy, Gender, Age

Model 2

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.431 ^a	.186	.173	.91151166

a. Predictors: (Constant), Zscore(AverageTrustInGov), Zscore(AverageRiskPerception), Age, Edu_dummy, AreaLiving_Dummycorrect, Gender, Zscore(AverageEfficacyBeliefs), Zscore(AverageCampaignAwareness), Income_dummy

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	111.586	9	12.398	14.923	<.001 ^b
	Residual	489.373	589	.831		
	Total	600.959	598			

a. Dependent Variable: Zscore(AveragePreparednessBehavior)

b. Predictors: (Constant), Zscore(AverageTrustInGov), Zscore(AverageRiskPerception), Age, Edu_dummy, AreaLiving_Dummycorrect, Gender, Zscore(AverageEfficacyBeliefs), Zscore(AverageCampaignAwareness), Income_dummy

Model 3

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.433 ^a	.187	.174	.91132037

a. Predictors: (Constant), ZInteractionTermCampaignAwareXPreparedness, Edu_dummy, Zscore(AverageRiskPerception), AreaLiving_Dummycorrect, Zscore(AverageTrustInGov), Age, Gender,

Zscore(AverageEfficacyBeliefs),
 Zscore(AverageCampaignAwareness), Income_dummy

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	112.622	10	11.262	13.561	<.001 ^b
	Residual	488.337	588	.831		
	Total	600.959	598			

a. Dependent Variable: Zscore(AveragePreparednessBehavior)

b. Predictors: (Constant), ZInteractionTermCampaignAwareXPreparedness, Edu_dummy, Zscore(AverageRiskPerception), AreaLiving_Dummycorrect, Zscore(AverageTrustInGov), Age, Gender, Zscore(AverageEfficacyBeliefs), Zscore(AverageCampaignAwareness), Income_dummy

Appendix D:***Recruitment message Instagram***

Recruitment message Facebook

2:45



49

**Isa Schuit**

4d · 1



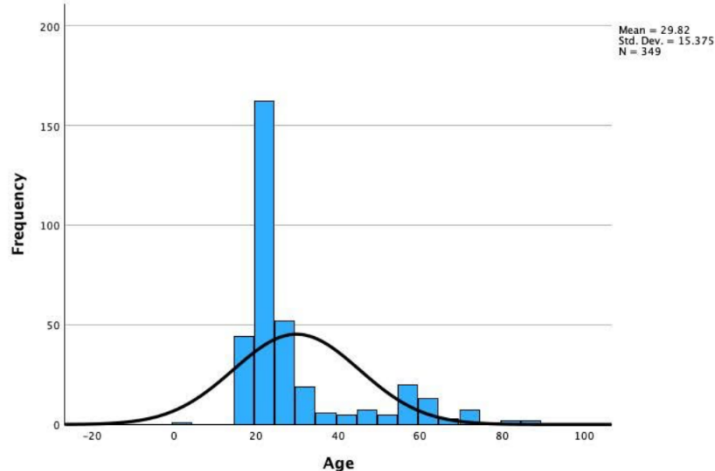
Beste allemaal,

Ik zit midden in mijn scriptieperiode en ben nu bezig met het analyseren van de antwoorden. Zoals je op het plaatje kunt zien, is de leeftijdsverdeling nog niet helemaal in balans. Daarom ben ik dringend op zoek naar mensen tussen de 30 en 60 jaar die mijn (korte en interessante!) vragenlijst nog even willen invullen.

Alle hulp wordt enorm gewaardeerd!

Liefs,
Isa

https://erasmusuniversity.eu.qualtrics.com/jfe/form/SV_80Tj3AnhRTBTviS



Send



1

12 shares

Appendix E: Findings and Policy Recommendations

Empirical Finding	Policy Recommendation
Efficacy beliefs are a strong predictor of preparedness behavior	Campaigns should prioritize empowering messages that build self-efficacy. Use visual guides, testimonials, and checklists that highlight doable steps and portray relatable examples.
Campaign awareness is significantly associated with preparedness behavior	Increase campaign visibility through multi-channel strategies: social media, national TV, community locations (libraries, schools, supermarkets), and local events.
Low average awareness of Denk Vooruit among the public	Expand outreach via local messengers and platforms. Use influencers, community leaders, and trusted figures to improve engagement and message retention.
Limited impact of risk perception on preparedness behavior	Avoid overreliance on fear appeals. Instead, pair urgency with clear action steps to ensure people do not feel overwhelmed.
No significant effect of general trust in government on preparedness	Utilize specific, trusted messengers rather than generic government branding. Local leaders, teachers, and healthcare workers can act as more credible sources.
Urban residents are less likely to be prepared than rural counterparts	Tailor interventions for urban environments where space or perceived risk may be lower. For example, promote compact emergency kits suitable for apartments.
Income is positively associated with preparedness behavior	Subsidize emergency kits or offer discounts through public-private partnerships. Distribute kits during National Preparedness Week to normalize the behavior.
Education does not significantly predict preparedness behavior	Invest in public education campaigns that reach all levels of education, using clear, jargon-free language.
Structural and financial barriers were mentioned frequently in qualitative responses	Address economic inequalities by offering material support. Also, integrate preparedness into school curricula to ensure equitable early exposure.
Older individuals are more likely to engage in preparedness behaviors	Create age-sensitive outreach and support younger people with tailored, relevant examples and peer-driven campaigns.