UNIVERSIDADE CATÓLICA PORTUGUESA

# CRISIS COMMUNICATION AND PUBLIC PERCEPTION IN A HEALTH CRISIS: THE EFFECTIVENESS OF THE PORTUGUESE AUTHORITIES' COMMUNICATION STRATEGY TO FIGHT COVID-19 PANDEMIC

Dissertation submitted to Universidade Católica Portuguesa to obtain a Master's Degree in Communication Sciences with the Specialization in Communication, Marketing and Advertising

By

MARIA INÊS FERRAZ VIEGAS DAMÁSIO

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**FEBRUARY OF 2023**

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UNDER THE SUPERVISION OF PROFESSOR MARIANA VICTORINO

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ABSTRACT

The beginning of 2020 was marked by the outbreak of SARS-CoV-2, an unprecedented health crisis that struck the whole world and forced governmental institutions to develop crisis communication strategies in order to deal with the virus and all its consequences. Considering the unfamiliarity with the virus and the disease among the scientific community its fast spread and contagious rate led society to face new challenges such as harsh confinements, adoption of mitigation measures, and complex social, economic and political dynamics. Given this situation, Governments and Health authorities had to implement new ways of communicating, conveying preventive messages to the public, and carrying out communication strategies to manage the ongoing health crisis.

In this context, the object of this research is related with the modus operandi of health authorities concerning the communication strategies performed to mitigate Covid-19 pandemic as well as the public perception, using Portugal as the geographic scope of the research. More specifically this investigation focuses on understanding how effective the Portuguese government and health authorities' communication strategy was in the combat of SARS-CoV-2, more specifically to capture how the Millennial and Z generations' sentiments throughout the pandemic were. As so, this theme has as its main objectives to analyze the communication strategy implemented by the Portuguese authorities, to understand the outcome of the implementation of the communication strategy on the commitment of the public to follow the rules established, and to access the Portuguese public emotional response towards the communication strategy as well as the virus, through traditional and modern media.

The methodology outlined for this particular study implicated the use of a mix-method approach resorting to a qualitative analysis of the Portuguese Government’s communication strategy as well as an online survey to acquire the public’s perception of Millennial and Z generations about the course chosen to fight the Covid-19 outbreak, in Portugal. In view of the study carried out it was feasible to verify that the communication strategy was overall effective in its purpose and that the Portuguese public, within the range that was under analysis, trusted the authorities to handle the health crisis in the best way possible.

**Keywords:** Covid-19; Crisis Communication; Health Crisis; Public Perception; Portugal

**Resumo**

O início do ano de 2020 foi marcado pelo aparecimento do vírus SARS-CoV-2 que originou uma crise de saúde sem precedentes, atingindo uma escala global e forçando as instituições governamentais a desenvolver estratégias de comunicação de crise para controlar a propagação do vírus. Perante o desconhecimento por parte do meio científico sobre o vírus e a doença, a sua rápida disseminação e elevada taxa de contágio, a Covid-19 obrigou a sociedade a enfrentar obstáculos ímpares como confinamentos prolongados, adoção de medidas de mitigação e situações sociais, económicas e políticas de grande complexidade. Assim, as instituições governamentais e autoridades de saúde recorreram à implementação de novas formas de comunicação e de transmissão de mensagens preventivas à população.

O tema da presente investigação relaciona-se, pois, com o *modus operandi* das autoridades governamentais nas estratégias de comunicação com vista a atenuar as consequências da pandemia, bem como a perceção pública recorrendo à situação portuguesa como base para este estudo. Mais concretamente, esta investigação centra-se na compreensão da eficácia da estratégia de comunicação das autoridades portuguesas no combate à Covid-19 e mais concretamente na perceção dos Millennial e geração Z ao longo da pandemia. Assim, este tema tem como principais objetivos analisar a estratégia de comunicação implementada pelas autoridades portuguesas, compreender o resultado da implementação da estratégia de comunicação na adesão às medidas de mitigação e compreender a perceção dos Millennials e geração Z sobre a estratégia de comunicação e o vírus, através de meios tradicionais e digitais.

Neste âmbito, foi delineada uma metodologia que recorreu à análise qualitativa das estratégias de comunicação implementadas pelas autoridades portuguesas e também um inquérito online para compreender a opinião pública sobre a comunicação portuguesa e sobre o rumo da pandemia. Perante o estudo realizado foi possível verificar que a estratégia de comunicação foi considerada como eficaz pela parte da população portuguesa objeto da investigação, que também demonstrou confiança nas autoridades para lidar com a crise sanitária em Portugal.

**Palavras-Chave:** Covid-19; Crise de Comunicação; Crise Sanitária; Opinião Pública; Portugal

**ACKNOWLEDGEMENTS**

As I started my Master's journey I could not have imagined how challenging and enriching the process of developing an investigation would be. The sentiment of relief and accomplishment thrives as the only word that represents this moment is Pride. To conclude the Master's dissertation in Communication Sciences – Communication, Marketing and Advertising at Universidade Católica Portuguesa, this research in Crisis Communication and Public Perception represents two years of investigation, perseverance, hard work and dedication - not only mine but also dedication from those who have been there for me.

Therefore, my acknowledgement goes to:

Foremost, to my supervisor Professor Dr. Mariana Victorino, to whom I am most thankful . Professor Dr. Mariana has always been present with endless availability, support, dedication, and understanding throughout the elaboration of this research. Also, for having granted me the opportunity to work alongside her and Omnicom's PR Group brilliant team.

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To all my family and friends for their love, friendship, and advice. I thank them for being there for me in the good and bad times, for always pushing me in the right direction when I needed it.

Finally, a special acknowledgment to:

**My mother**. Mafalda. For all her love, patience, and sacrifices. I love you.

**My grandparents**. Mª Manuela and Luiz. Two of my greatest inspirations in life.

**I thank them for their tireless dedication and unconditional love.**

**DEDICATION**

*I dedicate this Master's Dissertation to*

*My mother and grandparents, to whom I'll always dedicate my success to.*

***Statement of original authorship***

I declare that the information contained in this dissertation is the result of my own work. Where the work and research has been used, published or unpublished, full acknowledgments according to the academic convention used in *Universidade Católica Portuguesa* have been given. I also hereby declare that this thesis has not been presented or published before.

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## LIST OF KEY ABBREVIATIONS

| | |
|---|---|
| **AIEP** | Association of the Foreign Press in Portugal |
| **ARS** | Regional Health Administrations |
| **CNS** | National Council of Public Health |
| **DGS** | General-Directorate of Health |
| **ECDC** | European Center for Disease Prevention and Control |
| **IGAS** | General Inspection of Health Activities |
| **INSA** | National Institute of Health Doutor Ricardo Jorge |
| **IRT** | Image Repair Strategies |
| **PHEIC** | Public Health Emergency of International Concern |
| **RA** | Autonomous Regions |
| **SCT** | Source Credibility Theory |
| **SCCT** | Situational Crisis Communication Theory |
| **SNS** | National Health Service |
| **WHO** | World Health Organization |

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# INTRODUCTION

## 1.1 Background and Justification

Revisiting December of 2019, in Wuhan, the largest city and capital of the province of Hubei in China, a new pandemic arose and with it brought uncertainty, fear, damages in health and economic systems that would have large implications on societal life. The current outbreak caused a disruption of life how we knew it, mainly provoked by harsh consequences of the virus medically known as SARS-CoV-2 or Covid-19.

The beginning of 2020 was marked by the exponential increase of positive Covid-19 cases and first deaths worldwide. After three months, on 11th of March of 2020, the World Health Organization (WHO) declared Covid-19 outbreak as a pandemic and, by then, already more than 118,000 people had been affected and 4291 deaths had occurred (Lopes *et al*, 2021). Being an unknown disease with no effective medical treatment it began to stir the social, economic, and political sphere which led to different approaches by governments on communication strategies to face the outbreak. Considering the rapid spread of the virus, governments established measures that would reduce and control the virus transmission such as physical distancing and specific hygiene practices which included frequent hand washing, cough etiquette and later on mandatory face masks indoors and outdoors. Moreover, as part of WHO's risk communication strategy it was also implemented the use of graphical information materials that had as main objective to inform and persuade the community such as posters, flyers, social media posts and advertisements.

Under these circumstances, understanding governments' communication strategies as well as the public's perception and communicative behaviour towards the measures applied begun to have some impact in the academic field.

Therefore, the relevance of this research can be divided into two areas: On a first note, and as an interesting aspect to complement the relevance of this research is the reawakening of a communication genre - Health Communication - which aims to convey better results to improve society's and individuals' health. In other words, health communication is an active contributor to diverse aspects of disease prevention and health promotion due to skills in understanding and applying health information material to have a substantial impact on the

behaviors and health outcomes, and in this case, the combat of Covid-19. Consequently, the first area of relevance in this research is **Communication**, specifically communication strategies established by governments during the pandemic, particularly the Portuguese communication strategy. Such a rapid spread of the disease demanded from the political and health authorities to communicate immediate and precise information but also to be coordinated in all the messages conveyed. Hence, the coronavirus outbreak exposed how political and health systems tried to developed effective communication strategies, conveyed preventive messages to the public, and how they carried out a communication strategy to manage an ongoing crisis.

But how can we measure the effectiveness of the communication strategies implemented by the government? Some studies have shown a certain difficulty in developing effective messages that would appease the public, resulting in confusing messages that would fail to communicate effectively. Therefore, taking into consideration the nature of the virus, its unknown effects and consequences, and the economic and social cultural context of the country in analysis (Portugal), the public represents an important asset for the recognition of how and if the communication strategy has been well enforced and consequently acknowledged, accepted, or followed by the receivers. Having a good communication channel between all parties involved creates a solid foundation of trust which may lead to a possible adherence of mitigation strategies that shape how the public perceives the disease, the government measures and the entire health environment they are in.

As so, from an academic perspective this research aims to understand and analyze the communication strategy adopted by the Portuguese authorities during the two initial years of the pandemic, as well as the public perception towards the messages and measures imposed by the Government to fight SARS-CoV-2.

The biggest societal challenge had begun (Lopes *et al*, 2021).

## 1.2 Research Goals and Objectives

This dissertation aims to analyze the *modus operandi* of health authorities on the communication strategies implemented to mitigate Covid-19 infections during the pandemic, as well as the public perception using Portugal's context as its fundamental grounding. To develop a research, it is crucial to have a reasonable object of study and clear goals, given that each element shapes the logical thinking and purpose of the investigation.

Therefore, this investigation has as its research object the **Portuguese Authorities' communication strategy** and its **public perception**, in the context of the Covid-19 pandemic.

Whereas the **goals** for this investigation are the following:

- To analyze the communication strategy implemented by the Portuguese Authorities to fight the SARS-CoV-2 pandemic, in Portugal;
- To understand the outcome of the implemented communication strategy on the commitment of the public to follow the rules established in order to fight the pandemics;
- To access the Portuguese public sentiment towards the communication strategy, and the virus, through the adverts on traditional and modern media.

### 1.3 Research Question and Derivations

The investigation problem must be translated into a precise and realistic question, which is a real question that manifests the intention to understand the phenomenon, and that it is adequate to our personal resources and materials at our disposal (Quivy and Campenhoudt, 1995).

The title of this Master's Dissertation - "Crisis communication and public perception in a health crisis: the effectiveness of the Portuguese authorities' communication strategy to fight Covid-19 pandemic" - briefly discloses the objective of this investigation, however, to develop a clear and precise research question it is essential to have the key elements present, such as the target population and direction of the research (Quivy and Campenhoudt, 1995).

As so, in this investigation the Millennial and Z generation will serve as the target population. Millennials are the young adults born in-between 1981 and 1996 and Generation Z are those who were born in-between 1997 to 2012 (Dimock, 2018) which were chosen also as part of the target group for this research due to their active role in connectivity, proximity, and better understanding of social platforms and their content. After all they are the legitimate digital generation (Leung, 2013). The period of analysis for the Portuguese authorities' communication strategy was set on the two first years of the pandemic considering the starting point for the application of mitigation strategies, duration of the most critical period of the outbreak, but also to comprise the most relevant outcomes of the measures imposed by the Portuguese government and health authorities.

Therefore, the primary research question is:

"**What was the crisis communication strategy followed by the Portuguese authorities during the first two years of the pandemic, and how did it impact the Portuguese Millennials and Z generation?".**

## 1.4 Scientific Positioning and Methodological Options

The scientific positioning chosen is based in an interpretative paradigm. Even though interpretivism is commonly used in qualitative approaches, several authors defend that qualitative methodology is not a synonym for interpretive approaches (Myers and Avison, 2002). One of the main features of the interpretivist paradigm is that it allows an interaction between the researcher and the practitioners during the gathering of empirical data which grants an acknowledge, reconstruction, and understanding of the social world (Goldkuhl, Göran, 2012: 5-6) allowing to deepen the "complexity and meaning of situations" (Iain Black, 2006: 319).

Align with this scientific positioning and to broaden the gathering of data and its subsequent analysis, this research will follow a mixed-methods methodology. This methodology differs from traditional approaches since it allows to conduct an investigation by resorting to two methodological approaches - quantitative and qualitative - in a single study.

When defining the research methods to use one can find different definitions. Leedy and Ormrod (2001) elaborated a definition which states that research methods is the process of collecting, analyzing, and interpreting data in order to understand a phenomenon. Additionally, Harding (1987) detailed three main categories into which research methods could be approached such as "listening to informants, observing behavior or examining historical trace and records" (p.2).

As so, Hayes *et al* (2013) described mixed-methods methodology as being of basic level intertwining the collection and analysis of quantitative or numerical data with narrative or experiential data. Mixed-methods is the research method in use for this investigation since it takes advantages on the strengths of both qualitative and quantitative research while improving weaknesses to provide a full understanding of the topic under investigation (Halcomb and Hickman, 2015) since it's viewed as the methodological option that has more to offer to social sciences research (Doyle *et al,* 2009).

## 1.5 Structure of the dissertation

The present dissertation starts with a theoretical section with wo chapters that analyze the most pertinent concepts related to the fundamental grounding of the study. In this sense, the literature review begins with an introductory chapter with multiple definitions and types of crisis developed throughout several decades of investigation divided into four sub-chapters: Crisis Management, which addresses the definitions of crisis management while providing insights on several schematics/theories developed by several authors on how to execute effective management when encountering a crisis situation; Crisis Communication, where a contextualization of the most relevant transformations of communication models occurs, such as IRT and SCC and how can they be applied to different crisis; Crisis in Leadership, which provides insights in the different leadership types and how do they affect the public opinion, and lastly, Crisis Communication in Portugal during COVID-19 pandemic which addresses the evolution of Covid-19 worldwide and the overall panorama of Covid-19 in Portugal. The second chapter elaborates a contextualization on Public Perception approaching risk perception and its consequences for the success of the effectiveness of crisis communication and its strategies.

This is followed by the empirical chapter which presents the methodology for the research, encompassing the methodological strategy and design, the population and sample of the research, data collection - sub-divided into qualitative and quantitative collection -, data analysis of the previous data collection and a critical reflection incorporating the theoretical approach to the results obtained. The methodology outlined is grounded on the use of a mix-method approach resorting to a qualitative analysis of the Portuguese Government's communication strategy as well as an online survey to acquire the public's perception of the course chosen to fight the Covid-19 outbreak in Portugal.

# I. CONCEPTUAL FRAMEWORK

## 1.1 Crisis Characterization

*Wei-ji* and *Krisis* designate the same event: Crisis. Meanwhile *Wei-Ji* are Chinese characters that formulate the word crisis, it can also mean "danger" and "opportunity" which can be perceived as opportunities that arises after a period of danger, whereas *Krisis*, a Greek word, that can be similar to "decision" or "choice" (Darling, 1994; Paraskevas, 2006). Kuipers and Welsh (2017) affirm that events such as crisis, hazards, and risk situations have always been upon us, and although a definition hasn't been so easily formulated as the word in itself, throughout the last three decades various scholars tried to meet ends on crisis definition, types, and models resulting on an abundance of definitions in the existing literature (Darling, 1994).

The first step when facing a crisis is to understand their characteristics, causes, and types (Shrivastava and Mitroff, 1987). Herewith, Pearson and Claire (1998) describe crisis as "low probability, high impact event that threatens the viability of the organizations and is characterized by ambiguity of cause, effect and means of resolution, as well as by a belief that decisions must be made quickly" (Pearson and Claire, 1998: 60) which is supported by Pauchant and Mitroff (1992) and Seeger's *et al* (1998) view of crisis as a non-routine event that has the power to affect systems as a whole, threaten its existential core or high priority goals. Furthermore, scholars as Sawalha *et al* (2013), Alexander (2005b) and Shaluf *et al* (2003) all agree that a crisis represents a risk to a business which might trigger consequences, draw public and media attention, and threaten the public trust. Regarding the uniqueness of each crisis, Shaluf et al (2003) corroborates with Robert and Lajtha (2002) on Darling's (1994) view that crises are specific events that can result on different responses from managers, yet Farazmand (2001) believes that understanding the causes of a crisis will help managers to overcome the situation more easily or find solutions to do so.

Moreover, Mitroff (2004) draws attention to the academic field to look upon crisis on two types of perspectives, the operational perspective and political-symbolic perspective; the operational perspective focuses on the management of the crisis in itself whereas the

political-symbolic perspective follows a more ethological path, mapping out how managers and society make sense of crisis. Besides, Howard (1993) mentions three different notions of crisis that sum up all of the above: a) a failure in the company's system, an accident or dangerous situation that might create hazards and threats to people, property and/or the environment; b) unexpected extensive damage or loss of control that requires an efficient action to restore operations; c) a situation that might affect the company's image, corrupt social responsibility, and financial well-being.

On the other hand, Quarantelli (1986) approaches crisis in two categories: community crisis and non-community crisis. Community crisis can be non-industrial, industrial and natural crisis whereas non-community crisis are only related to events that do not have an impact towards the community such as "transportation accidents" (Quarantelli, 1988). Additionally, non-industrial crisis can result of either a conflict type situation, economic or social crisis. Within conflict type situation there are internal or external crisis - internal crisis can be political regimes, internal conflicts, strikes, public manifestations, sabotage, executive kidnapping, or hostile takeovers, whereas external crisis can be all kind of wars, threats, relation breakdown, embargoes, blockades and terrorism or of a non-conflict type situation.
Concerning economic crisis, it can be financial or non-financial. Social crisis has a bigger dimension than all of the above, it may include corruption's, blackmail, gender or religion discrimination, sexual harassment, false rumours, misinformation/communication, price fixing, on-site tampering, among others. Also, industrial and natural crisis are a reaction to "disaster", socio-technical or natural disasters, yet "disaster is not a crisis in the traditional meaning of the word" (Shaluf *et al*, 2003: 24) as explained later on.

In addition, communicational scholars have approached crisis definition directly on organizational behaviours and practices, or in communication-centred views which have grown in interest on scholars that typically examine crisis in organizational or political contexts (Health and O'Hair, 2009)

On that account, Seeger (2018) expresses how communication is essential to meaning-making of unsure events as well as the significance of communication as a core piece to crisis and risk management, which aligns with Gigliotti (2019) idea of

communication being a conceptual orientation and a unique tool in understanding and managing crisis. Organizational crisis, for Paul Shrivastava and Ian Mitroff (1987), can have different types and triggering effects thus a compilation of past corporate crisis was elaborated and both understood that each crisis analysed resulted from organization-environment interactions of socio-technical factors. As so, Shrivastava and Mitroff (1987) believe that two dimensions in corporate crises exist, the internal-external dimension and the technical-social dimension. Corporate crisis requires an understanding of its causes and characteristics so that there is a higher probability on an effective resolution since it might evolve simultaneously different sectors inside and outside of the corporation, it also can be associated with large implications on social, political, and economic dimensions turning "small incidents into major events, and major events into catastrophes" (Shrivastava and Mitroff, 1987: 7).

Most of the literature interpretation corresponds to a negative situation, although in the early 1980, positive connotations started to appear and brought more contemporary views of crisis. Some crisis are unpredictable with or without crisis management measures, organizations must learn, adapt, and reshape to be more effective in its prevention which in a long run represents a positive outcome and development for the organization crisis management. Crisis should not be seen as only having negative outcomes, it can also be a turning point (Ulmer et al, 2018) a crucial time for organizations, or an opportunity.

Speaking of opportunities, that is what Cubbit (2022) perceives in a disaster event, "no longer a challenge: it is an opportunity (…) no longer means avoiding risks but seeking them out" (Cubbit, 2022: 262). Similarly to crisis definition, hazards or disaster varies in definitions, Shrivastava (1988) viewed disaster as an agent of crisis whereas Rodríguez *et al* (2007) sees as an extreme event that emerges after an interaction with the social system, in its essence a threatening event that can unfold in many forms, as Jackson and Hood (1991) described a "out-of-the-ordinary" (Jackson and Hood, 1991:17) event that could result on death, injury, damage or economic loss.

Analyzing its evolution, disasters were traditionally viewed as "acts of God" (Jackson and Hood, 1991: 17), as purely a result of human actions, and only a decade later the natural occurrence of disasters began to be questioned (Wisner *et al*, 2004; Hilhorst,

2013). According to Oliver-Smith (1999) the relation between hazards and the society is increasingly mutual, intensified by environmental degradation and climate change which supports affirmations, definitions and models elaborated throughout time.

Hilhorst (2013) considers that disaster studies "often make a distinction between natural hazards and disasters to recognize the social nature of disasters" (p.3) they are involved in management procedures in order to cope under intricate conditions, such as a technical emergency that imply threats of injury or loss of life (Turner and Pidgeon, 1997; Richardson, 1994). Additionally, Turner and Pidgeon (1997) a disaster is of unusual nature or a man-made event which can cause economic loss, damage, injury or loss of life, classifying disaster in two categories: as natural or man-made. Although, other perspectives arose such as Hood and Jackson (1991) that believe that disaster can be distinguished into three types: purely natural, meaning not caused by human activity; purely social which is a result of human action only; and hybrid, that can result from both previous types, an interaction between human activity and natural forces. In this sense, contrasting actors perceive disasters as different types of events and as a result they prepare for, manage and record them in very distinct ways (Bankoff and Hilhorst, 2009: 3).

In short, crisis and disasters have increased interest and frequency among organizations, non-organizations, governments and the media, which accentuates the need for a rapid and effective response, as well as management and planning procedures. The existing literature for crisis and disaster are mainly economic, natural, or hybrid driven, regardless of its discipline. The same attention is required to management procedures which suggest a certain similarity in events however it is in the characteristics that differ, as the case of Covid-19 outbreak. An event such as this - a pandemic - "is classified as a natural hazard" (Seddighi, 2020: 1) which causes social disruption, damage and fatalities (Cutter, 2017). Within the definitions approached above, the Covid-19 pandemic fits within Parkers' (1992) or Turner's and Pedgeon (1997) natural category or in Hood's and Jackson (1991) hybrid category. Thus, being considered as a natural or hybrid crisis for some authors, it can be also perceived as a social, political and economic crisis.

### 1.1.1 Crisis Management

"The ambiguous nature of crises makes planning for a crisis difficult" (Penrose, 2000: 157). Crisis management is a key element in any organization where the development of a strategic plan should be built-in in the organization's management plan (Jonhson & Peppas, 2003; Pheng & Ann, 1997; Shrivastava and Mitroff, 1987; Spillan, 2000). Moreover, these authors declare that strategic planning is essential in crisis management, since it is the outcome of preventing and responding to a crisis with the purpose of eliminating risk and unpredictability (Williams and Olinarian, 2002). Kash and Darling (1998) define crisis management "a series of functions or process to identify study and forecast crisis issues" (p.179) which aligns with Penrose's (2000) explanation that a proactive planning incorporates several mechanisms that assist to determine a potential crisis and how to proceed during and after these events, thus a comprehensive plan that includes all areas of the organization.

"Many definitions of crisis management have been modified, for several years, by authors dealing with these issues" (Vašíčková, 2019: 64). Within the last century there has been a great contribution to the crisis management literature segmented into two main areas – reactive and proactive approaches. On an explorative conceptual grounding Pearson & Mitroff (1993) approach crisis management as a process that leads to the readiness of the organization to face a crisis and where stakeholders have a participative role. On an exploratory conceptual research Pollard & Hotho (2006) model aims to highlight the planning process to provide mechanisms for upcoming crisis, highlighting the strategic setting of crisis management, whereas Mitroff et a*l* (1987) theory focuses on corporate crisis and examines various strategies to deal with it and underline the role of crisis management on a specialized team.

In empirical exploratory research, Spillan (2000) debates about the need to have strategies before, during, and after a crisis occurs and presents two models. A crisis management relation model that differs between reactive and proactive approaches - a reactive approach focuses on eliminating all the consequences of the crisis, whereas the proactive approach goes directly into the prevention of the crisis and, if possible, its total

avoidance. Yet, in the proactive model, on a post-crisis stage, there is the need to evaluate, to plan scenarios, and to prepare for another crisis.

Additionally, crisis management is not related to mismanagement - crisis management is about providing the organization with an organized plan to respond, in an efficient way, to a crisis, whereas mismanagement is the lack or inappropriate planning (Darling, 1994). Although crisis management might be different in accordance with each country's culture the main goal is for organizations to have advantages by designing and developing scenarios and crisis management plans (Khodarahmi, 2009; Pollard and Hotho, 2006).

As mentioned above Mitroff *et al* (1987) formulated a model of crisis management as demonstrated below in figure 1. that expresses that crisis management is a "never-ending process" (Mitroff *et al*, 1987: 285). An organization should learn with previous situations, absorbing the positive and negative outcomes in order to have an effective management when and if a new crisis emerges. Therefore, this model presents four points: Point I - Detection, Point II - Crises, Point III - Repair and Point IV - Assessment.

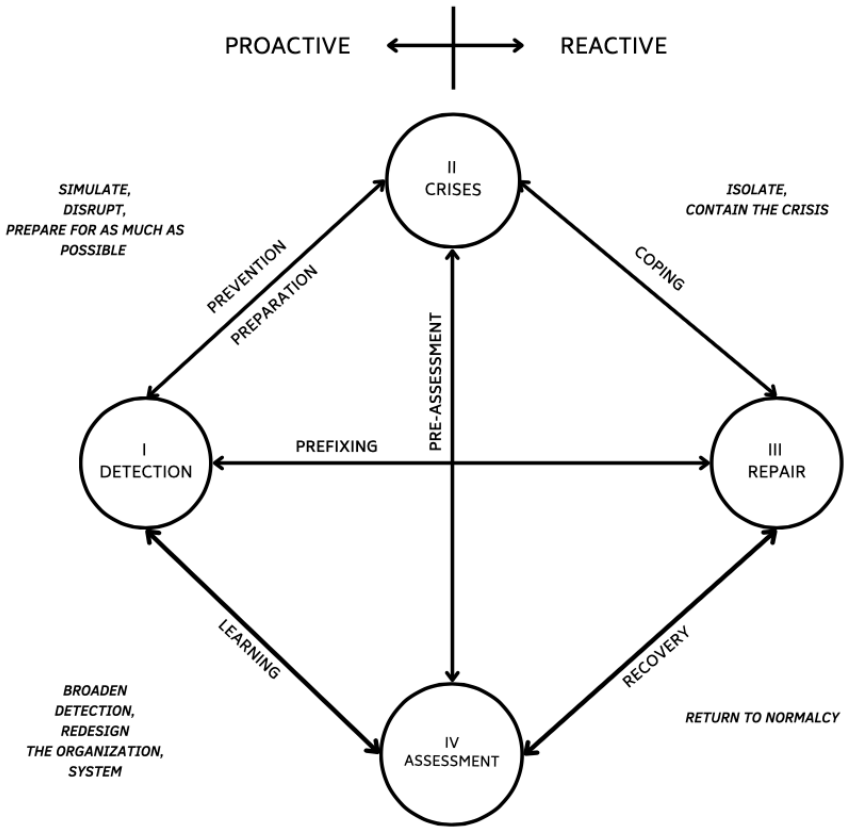



Figure 1 | Model of Crisis Management. Adapted from Mitroff *et al* (1987) Effective Crisis Management.

This particular model should be analyzed clockwise and can be entered and exited from any point. However, it is recommended to start on Point I - Detection or the organization's early warning systems that include "computerized process control systems, plant/equipment monitoring systems, management information systems, and environmental scanning systems" (Mitroff *et al*, 1987: 285) which are tools to monitor forthcoming crises. Nevertheless, to foresee a crisis that has not been detected is highly difficult and for that reason the prevention/preparation line follows the entry point detection.

Following the analysis, point II or Crises is an indicative of the frailness of organizations, meaning that a crisis might occur without a warning, however "constant testing and revision of plans should allow an organization to cope more effectively with crises that occur" (Mitroff *et al*, 1987: 285) which can be translated into the creation of learning mechanisms, scenarios and plans as procedure and element features of a strategic planning process (Schoemaker, 1993). Additionally, the two remaining points - III and IV - refer to a post-crisis situation where efforts are being made to a full recovery as well as learn with past crisis and shape a more effective plan for the future as briefly detailed : "the more potential crises an organization can anticipate and prepare for (regardless of whether it can completely prevent them or not), the more quickly and successfully it will recover from any crises that strike." (Mitroff *et al*, 1987: 285).

A similar approach formulated by Dr. W. Edwards Deming (1993) known as the PDSA cycle - Plan, Do, Study and Act - correlates with Mitroff *et al* (1987) crisis management model since Deming's reframed model grounds on the continuous process of learning and effective improvement. This particular model has evolved from the Walter Shewhart's cycle (1939) to being Deming Wheel (1950) and later on to Shewhart Cycle for Learning and Improvement - The PDSA Cycle (1993). Alongside figure 2. the cycle's name reveals where to start. The first step is to "Plan", to identify the purpose, define metrics, and put the plan into action. Following to the step "Do" in which the components set on the first step are implemented. Moving up to step "Study" where the outcome of previous steps are visible, where questions like "What did we learn?" and "What went wrong?" as shown on figure 2. should be asked.

The final step - "Act" - will close the cycle. With its end comes the opportunity to change and improve having in consideration all the knowledge acquired throughout the process, emphasizing Mitroffs' quote "crisis management is a never-ending process" (Mitroff et al, 1987: 285).

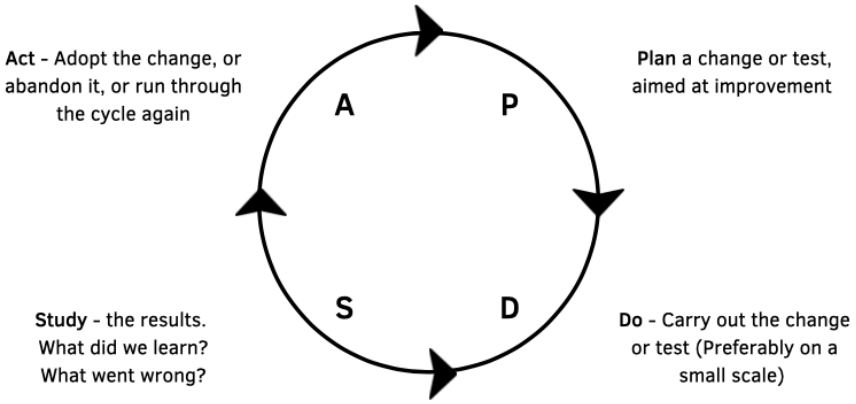



Figure 2 | PDSA Cycle. Adapted from Deming's (1993)

Furthermore, Mitroff *et al* (1987) and Deming's (1993) cycles are of high value to strategic planning since "allows for the supervision and monitoring from the status quo" (Correia et al, 2020: 6). The PDSA Cycle has already been used in the Portuguese public sector, specifically in the National Health Authorities (Correia *et al*, 2020). When in health crisis management, more particularly in the Covid-19 outbreak, the World Health Organization (WHO) is the "maximum authority" (Correia et al, 2020: 4) since it has possibility of sharing the most recent and accurate information on how to adjust to a new unexcepted crisis situation and an effective communication is crucial in the course of any pandemic (Gonçalves et al, 2021). Adding, Burkle Jr. (2019) argues that health crises should be handled through a multidisciplinary design, in which a bond between natural and social sciences should be recognized as key components to solve future challenges. Yet, public health is becoming part of a trend, "considered an essential element in all crises related disciplines ranging from medicine, engineering, law, social sciences and economics" (Burkle Jr, 2019: 35), where global threats and risks to public health protections have turned into a paradox in the field of disaster medicine (Al-Jazairi, 2017).

Theoretically, each country plans and designs their crisis management process and creates a framework grounded on the country's social, economic, and political characteristics to have a better impact and effectiveness on the public. Burkle Jr. (2019) perception on governance is established by a multidisciplinary design, a collaboration between natural and social sciences, to which Correia *et al* (2020) believe that crisis management needs to be approached from a multi-level governance: "types of coordination, organization capacity, stakeholders' mobilization and government forms" (p. 3).

This particular governance design provides a more simplistic view on pluralism and on stakeholders, individuals, and institutions, internal or external, and participation in different political levels (Stepheson, 2013) meaning that decisions are made throughout the chain of territorial levels and consequently less inappropriate policies are implemented. It can also be viewed as a process defined by a non-stop negotiation loop between governments on several territorial and administrative levels (Correia *et al*, 2020), the main objective is to govern with united fronts (Stepheson, 2013).

Moreover, according to Kern and Bulkeley (2006) multi-level governance has had an academic expansion and entered the political decision-making language emerging four types of governance, mostly applied in Europe like "govern by authority", "govern by provision", "govern by empowerment" and "self-government". In special cases of health emergency situation, the World Health Organization is the focal point to all countries on the dissemination of information and determine good hygienic practices to be adopted, even so based on the country's characteristics and legislation, governments and its territorial levels must elaborate their own effective norms to apply. Developing a multi-level perspective involves different types of coordination - vertical, horizontal and functional coordination - organizational capacity, stakeholders mobilization - partnerships - or governance forms (Correia *et al*, 2020) Therefore, having a solid collaboration, political boundaries and an effective plan of mitigation allows for a successful response (Correia et al, 2020).

### 1.1.2 Crisis Communication

Crisis communication has proven to be an increasingly important topic of interest in several areas, from political (Boin *et al*, 2009) to natural disasters which is why working in the field comes with great responsibility, especially when choosing an appropriate strategy in response to a crisis (Jin et al, 2007). For Seeger (2006) and Benoit (1997) traditional crisis communication focuses on the communication of crisis response from the organization to the stakeholders, meaning that the stakeholders are the target of crisis communication and the recipient of the messages from the organization. Thus, an appropriate strategy for Massey (2001) is to repair the organization's image and, at the same time, influencing the stakeholders' perception. Also, Sturges (194) argues that crisis communication should be viewed on a larger spectrum of areas of communication resulting on a more effective and efficient influence on the public's perception of significant matters to the organization. Nonetheless, planning a strategic communication serves to minimize the damage on the organization's image and repair its bad reputation (Benoit, 1997) and, as Zaremba (2014) states, crisis do happen, and if they do, organizations must be prepared to effectively communicate with the internal and external stakeholders, but also its public, if their goal is to salvage their reputation and bounce back.

Coombs and Holladay (2010) define crisis communication as "collection, processing, and dissemination of information required to address a crisis situation" (p.20) by making decisions and giving proper training to the crisis team in order to convey messages to the public "the traditional definition of crisis communication" (p.20). Moreover for these authors, crisis communication focuses on crisis category/crisis response, meaning how the organization reacts - says and does - after a crisis, taking into consideration that an improper crisis response might make the situation worse. Crisis communication, is therefore, the essence of crisis management, and in each phase of the process it's possible to identify types of crisis communication, (a) crisis knowledge management and (b) stakeholders reaction management (Coombs, 2009). As each type-name indicates, crisis knowledge management focuses on collection and analyzing the information, creating and sharing that knowledge to promote decision making, and it happens "behind the scenes" (Coombs and Holladay, 2010: 25) on the other hand, stakeholders react management works by influencing how the stakeholders perceive a crisis, the organization crisis and its response.

Crisis communication has an extensive academic background with multiple theories and models of crisis management to assist organizations during and after a crisis. According to Sturges (1994) there are three types of communication strategies which comprise, adjusts and internalize information. Moreover Bradford and Garret (1995) show evidence of five potential responses to crisis : (1) no response, (2) denial, (3) excuse, (4) justification and (5) concessions. The last response to crisis, concessions - statement agreeing on the crisis appearance, fault, control/impact and that the evaluative standard - turned out to be the most effective response according to their empirical study on relationships among crisis situation, response strategies and the effects associated (Huang, 2006). Bradford and Garret's (1995) findings concluded that when dealing with crisis situations, the crisis managers should respond with an appropriate communicative answer (Huang, 2006) "if they hope to protect their organization's image" (p.182). Nevertheless, there are arguably two dominant theories: Benoit's (1997) Image Repair Strategies (IRT) and the Situational Crisis Communication Theory, also known as SCCT (Coombs, 2017).

On a first note, IRT is the most prolific framework for informational crisis communication research (Coombs and Holladay, 2010) with the main focus on communication strategies that the organization should adopt (Benoit, 1997). Many scholars suggest that IRT represents a mix of beliefs, attitudes, and impressions that a group of stakeholders have regarding an object (Gotsi &Wilson, 2001). Benoit (1997) refers to reputation as image, meaning that to use IRT, an attack - an offensive act or accusation for the act (Coombs and Holladay, 2010) - to the image of an organization is necessary. In case there is no evidence or offensive act or accusation, there is no reputational threat (Benoit & Pang, 2008). Moreover, IRT crisis response strategies can be divided into three categories: denial, evading responsibility or reducing offensiveness; the first category involves a simple denial of the incident or a shift in the blame, meaning divert the blame to another; secondly, the evading responsibility divides into 4 subcategories - provocation, defeasibility, accidental and good intentions - which aims to perceive the responsibility of the organization on the incident (Wang *et al*, 2021). Lastly, the third category comprises the reduction of the offensiveness which include strategies as bolstering, minimize offensiveness of the act, differentiation, transcendence, attack accuser, compensation, corrective action and mortification (Coombs and Holladay, 2010). Thus, Cheng (2016) claim that there is some

criticism to IRT due to the lack of evidence to support its effectiveness and no clear suggestion of specific strategy choice for certain types of crisis.

Furthermore, the Situational Crisis Communication Theory (SCCT) is based on the public attribution of responsibility of the crisis onto the organization or other parties, identifying three crises' clusters: intentional cluster, victim cluster, and accidental cluster (Coombs, 2007). Coombs (2007) listed response strategies according to its accommodative level, from denial and diminishing, to rebuilding and bolstering which involve confronting a person or a group harshly criticizes the organization, affirming the non-existence of a crisis, shifting blame for a crisis to a scapegoat, offering compensation among others (Wang *et al*, 2021). Moreover, the SCCT is an evidence-based framework for understanding how to maximize the reputational protection afforded by post-crisis communication, and therefore allowing the organization to have a saying in the choice according to its responsibility on the crisis in itself (Wang *et al*, 2021).

In addition, SCCT has attribution theory in its roots (Coombs, 2007). As so, the attribution theory aims to understand how people make attributions of responsibility of the cause of an event, especially if it's a negative or unexpected event (Weiner, 2006) and will experience emotional responses to that attribution as anger and sympathy, the core emotions in this theory (Coombs, 2007). The principle of attribution theory is to convey to SCCT a relationship between the variables used, as possible to observe on the following figure 3, which will help to understand the crisis situation and which response strategies can be used in order to protect the organizations' reputation (Coombs, 2007). Thus, several studies have concluded that the perception of crisis from a specific public involves stimulus and emotions are argued to be a "critical stimulus" (Jin *et al*, 2007:83), therefore this perspective allows to understand what are the emotions that the public involved in the crisis experiences and create specific strategies according to their needs (Jin *et al*, 2007)

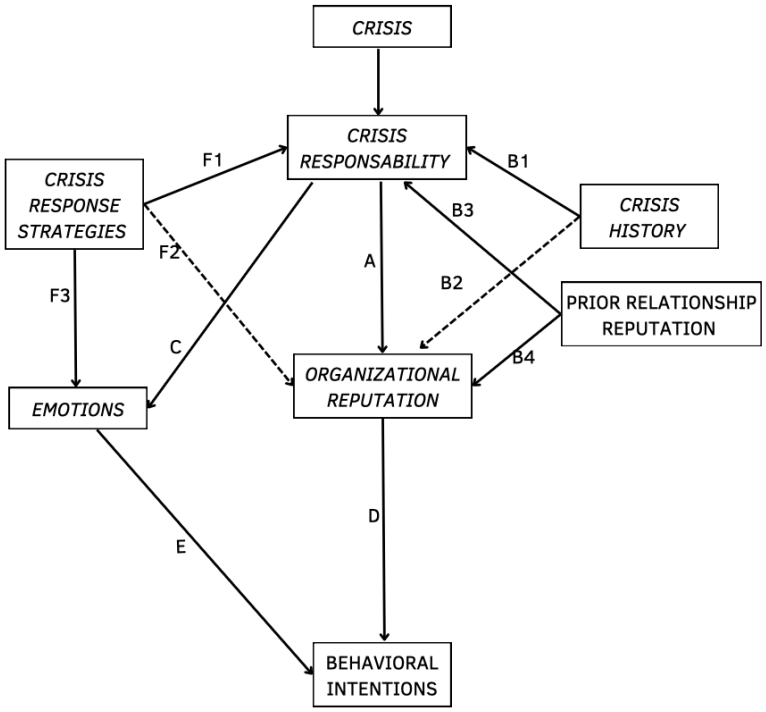



Figure 3 | Crisis situation model of SCCT. Adapted from Coombs and Holladay (2010)

Further research into SCCT demonstrate that this theory centers itself on the examination of the crisis situation by the crisis manager in order to evaluate the level of the reputational threat presented by a particular crisis. By threat, Coombs (2007) designates the amount of damage a crisis can inflict into the organization if not addressed properly. There are three main factors that shape the reputational threat: Crisis responsibility, crisis history and prior relational reputation, as demonstrated on the figure 3. Adding, Coombs and Holladay (2010) claim that case analyses have confirmed that the crisis response strategy has a significant impact on the reputation of an organization. Nevertheless, according to Timothy Coombs (2020) crisis communication can be interpreted as "the application of strategic communications in the management of crises" (Coombs, 2020: 991) and provides the example of a "black swan crisis" which represents a unique and unlikely to repeat itself crisis such as a pandemic. Taking the SCCT as ground theory, the most recent Covid-19 pandemic shapes itself into the category of victim cluster as an outbreak for being a natural disaster that has low crisis attributions (Coombs, 2007). The takeaways of situations such as this are that by examining and learning the dynamics of distinct crisis there is room for improvement as well as more readiness when facing an isolated crisis (Coombs, 2020).

### 1.1.3 Leadership in a Crisis

When it comes to the concept of leadership, it is safe to affirm that it has suffered a great deal of changes over the last 40 years, in particular the turning point for the concept shifting from overlooked to a relevant theme in crisis management and communication (James & Wooten, 2010). According to Boin & Hart (2003) crisis and leadership are concepts that are intertwine, since its common of social beings to look upon leaders in difficult situations hoping for action which when it happens and results in anxiety and stress reduction leaders are praised as "true leaders" (Boin & Hart, 2003: 545) however when the leader fails the outcome is being designated as scapegoats.

But what is Leadership?

Leadership is defined as "a process whereby an individual influences a group of individuals to achieve a common goal" (Northouse, 1997: 3). Timothy Coombs (2014) considers that upon a crisis, leaders have a tendency to emerge due to their effectiveness in crisis management. This perspective is also supported by James & Wooten (2010) who express that crisis leadership is a "frame of mind" where crisis leaders' are keener to learn and are more open to new ideas. Moreover James & Wooten (2010) note that leadership in a crisis can be considered as a unique feature, since the public eye and stakeholders have full attention on the leader who is in a constant pressure to put an end to the crisis in the shortest timeframe possible. Hence "organizational chaos, media pressure, stress and inaccurate information are but a few factors that make it very hard for crisis leaders" (Boin & Hart, 2003: 546)

Chermers (2000) details how the leadership theory evolved and has become one of the primary areas of leadership research, mainly in the study of Charismatic and Transformational leaders. Based on its evolution, within the organizational literature the conceptualization of charismatic leadership which is grounded on charisma changed from being a personal trait to a behavioral approach redefining the concept of charismatic leadership as an attribution (Conger & Kanungo, 1987). The updated concept allows to focus on the power of expectational leaders being able to influence others on social systems, transforming self-interest as values, preferences and aspiration into collective interest (Shamir *et al*, 1993).

As Ulrich Beck (1992) states, we live in a "risk society" where the well-being and collective security is "on top of the social and political agenda" (Boin & Hart, 2003: 546) which is why within crisis management the concept of leadership shifted into an essential element. Thus, in order to comprehend the leadership phenomena, it is crucial to perceive how does the process work and what outcomes does it produces. To this particular investigation, the leadership styles in analysis will be the charismatic and transformational theory since it has a huge impact on the scientific domain (Antonakis, 2012: 257) being described as the more popular theory.

Charismatic leadership and the term "charisma" originated from Weber (1947) which provided the initial explanations to why this style of leaderships had so much impact on individuals which was mostly acknowledge for influencing others with strong persuasions. Adding to Weber (1947), the leaders that had charisma meant to be attributed "with supernatural, superhuman, or at least specifically exceptional powers or qualities" (p.358). Nowadays leaders follow different guidelines though the intrinsic elements that make a leader powerful and charismatic are still under investigation (Antonakis, 2012). However several authors mentioned to classify charismatic leaders as risk-takers (Conger & Kanungo, 1998), individuals that set high goals and make sacrifices to reach the greater good (House, 1977; Shamir *et al*, 1993) but the most important know how to communicate appropriately and convey their messages in the best way possible so that the message is understood.

Within the literature about charismatic leaders there are three leading theories – House et al. (1977), Bass (1985) and Conger and Kanungo (1988). House's (1997) and Bass's (1985) theories focus more on the impact of the charismatic leadership onto the follower, whereas Conger and Kanungo (1987) model has as central piece the leaders' behaviors that will turn into the attributions of charisma. Regarding House's theory, besides focusing on the follower as described above, it provides an explanation on how leaders influence the followers and manage their perceptions as also how followers create emotional interactions and tend to achieve the leader's ideals and values which eventually will become role models (Antonakis, 2012).

On the other hand, Bass's (1985) theory is more focused on transformational-transactional approach which conveys charisma and vision but also behaviors more focused on the role and tasks. Adding, Bass's (1985) theory raises the followers' expectations and

influences the followers to take action while conveying a style of communication that is composed mainly by confidence that they can achieve the goals also known as the Pygmalion effect. Moving forward, Conger & Kanungo (1988) proposed a theory that explains how the leader is legitimized by the follower based on their perceptions and the leader's attitudes, where there is also a process of interaction between both parties (Antonakis, 2012).

According to Bryman (1993) there are two main possible reasons to why crisis requires the inherent characteristic of charismatic leadership: the first reason is that "crisis provides charismatic leaders with the opportunity to display charismatic behaviour" (Halverson, Murphy & Riggio, 2004: 498) and secondly, the follower's might change their needs and attitudes as a consequence of a crisis, which leads to the attribution of charisma to the leader. Thus, Yulk (1998) puts forward that the uncertainty and dubiety of the situation creates a growth in the leader's ability to show charisma whereas Pillai & Meindl (1998) claim that the selection of leader is based upon his or her charisma.

Moreover, Kets de Vries (1988) has an alike understanding of charismatic leadership: he suggests that, in time of crisis, the followers have a stronger bond with the leader, becoming more attached on account of direction and security. Similarly, Shamir and Howell (1999) and Hunt et al. (1999) corroborate with this line of thought and allege that when in times of stress and ambiguity, individuals – followers – are more likely to search for social cues and search for a leader and the better ranked leaders are crisis-responsive rather than non-crisis-responsive leaders. This is why crisis is indeed an intrinsic characteristic of charismatic leadership (Halverson, Murphy & Riggio, 2004) and the reason why it is popular in crisis management, as well as the role of leaders in a crisis.

## 1.2 Crisis Communication during Covid-19 pandemic in Portugal

### 1.2.1 SARS-CoV-2 evolution worldwide

Receding to November of 2019, Chinese citizens with odd pneumonias or similar symptoms started to present themselves to health care facilities (Bryner, 2020). However, it took a while for Chinese health authorities to comprehended and report which disease they were dealing with. According to South China Morning Post, the first case dates back to 17th of November 2019, to a 55 years-old male patient from Hubei province (South China Morning Post, 2019). Until then, the origin of the new disease was still unknown although theories started to be developed in late December 2019 due to the aggravation of suspected pneumonias. Some authors claim that it had a direct connection to the Wuhan Seafood Market (Allam, 2020a), others believe that origin of the first case was not from the Chinese province of Wuhan (Ma, 2020). In spite of the scientific progress to discover the type of virus its origin has not been clarified though it "has fueled much political and social divides" (Allam, 2020: 2)

December 2019 started off with more symptomatically suspected cases, between one to five per day (Allam, 2020a), and with voluntary entries of infected patients on hospitals (Bryner, 2020), reaching 41 cases (WHO, 2020a) on the 8th of December 2019, later on confirmed as positive for "2019-nCoV" (Allam, 2020a: 2). As the virus progressed so did the recurrence of the words "SARS" and "shortness of breath" (Li *et* al, 2020) and on the 29th of December 2019 infections reached its peak which led doctors to suspect of a severe acute respiratory syndrome. Among these health professionals, Dr. Li Wenliang warned the scientific community by explaining the necessity of wearing individual protection kits to avoid infection however, he ended up considered as a liar, "spreading rumours" and causing social disturbances (BBC, 2021). Dr. Li Wenliang caught the infection while treating his patients and died on the 7th of February 2020, which led to massive criticism on different social platforms (Tan, 2020).

The infection rate was breaking records and, according to Bryner's (2020) report, 180 people were already infected by 31st of December 2019 which resulted in the announcement by the World Health Organization (WHO) of the possibility of a new virus

with pneumonia symptomology but of undetermined etymology with no evidence of human-to-human transmission (Allam, 2020a). On January 1st of 2020, the Wuhan's Seafood Market was indefinitely closed and scientific data collection begun, being globally announced (Huang *et al*, 2020), on the 7th of January, as a novel coronavirus similar to SARS, denominated later on as "2019-nCoV" (Allam, 2020a: 3) which, according to Dr. Mike Ryan, executive Director of the WHO's Health Emergencies Programme, could indeed be transmitted from human-to-human since it is a respiratory pathology (WHO, 2020b). Unfortunately, the first death by 2019-nCoV occurred on the 11th of January of 2020, a 61-year-old male patient with "respiratory failure and severe pneumonia, septic shock, and multiple organ failure" (Allam, 2020a: 3).

Infections outside the Chinese borders begun to appear and, on the 13th of January, Thailand confirmed its first 2019-nCoV case (Allam, 2020a): a 61-year-old woman was detected in Bangkok international airport with high body temperature (fever). Since then, this woman had been in contact with family members and friends while experiencing symptoms (fever, headaches, chills and sore throat), however still none of her most recent and closest contacts were showing similar symptoms (Schnirring, 2020). The transmissibility of the virus was still under investigation but each day more suspected cases emerged inside and outside of the Chinese borders, like in Japan that had also detected its first case, a Japanese man in his 30's who lived in Wuhan and was traveling back to his country (Allam, 2020a) 2019-nCoV expanded throughout a great deal of countries in Asia, Europe and America with high rates of confirmed daily cases which led the WHO to examine the possibility "to declare the virus outbreak as a Public Health Emergency of International Concern - PHEIC" (Allam, 2020b: 10). Meanwhile, on January 21st, the World Health Organization spokesman Tarik Jasarevic declared human-to-human transmission and alarmed that more cases should be expected in other parts of China and possibly in other countries. Towards the aggravation of the spread of 2019-nCoV, North Korea closed its borders, Wuhan and neighboring cities were placed in locked down for unknow time duration (Kindred and Hawken, 2020), and the first cases were detected in Italy, France and the United States of America, more specifically in Illinois (Allam, 2020b).

Airlines from different countries prohibited flights from or to China, national citizens from Europe and America, in China, started to be evacuated, and on the 30th of January the WHO declared 2019-nCoV as a PHEIC and proposed to the International Committee on Taxonomy of Viruses a temporary name for the disease (Allam, 2020b), the SARS-CoV-2. By February 2020, more countries have started to evacuate its citizens, closing borders, and preparing for the worse while China was still the epicenter with 11,821 confirmed cases in the mainland. The pressure among health services was starting to show and, in order to maintain 2019-nCoV patients separated from non-patients, several coronavirus hospitals were built on a record time in Huan (Allam, 2020b). Economically, the situation was also delicate after having the Chinese national currency weakened against the dollar which led the World Bank to issue a statement detailing financial aid to those countries affected by 2019-nCoV (The World Bank, 2020). Lastly, at a social level, Chinese nationals were suffering from xenophobic and racism treatment like the Russian ban of Chinese citizens from Russian soil in February 2020 (Allam, 2020b). Besides The World Bank, the WHO also emitted a financial kit of 675 million dollars to help countries with weaker health system to prepare and respond to the 2019-nCoV (WHO, 2020a) to which also Japan contributed with 10 million dollars towards the preparation of weaker health systems (Schnirring, 2020).

Furthermore, as the infections continued to break records worldwide and several countries taking action against it, the United Kingdom issued a warning to its community stating the need to take 2019-nCoV seriously since it constituted a public threat (Perma.cc record, 2020) and severe measures were implemented in order to contain the spread, such as forced quarantine (Allam, 2020b). On the 11th of February of 2020 the WHO officially assigned to the virus the name SARS-CoV-2 or Covid-19 and from this day forward, Covid-19 test kits and vaccines started to be approached which led several organizations/institutes to develop Covid-19 test kits as the case of Shenzhen University with the collaboration of Shenzhen Tianshen Medical Department and Third Peoples's Hospital in China that elaborated a kit that would detect the coronavirus in 22 minutes (Allam, 2020b).

Taking close attention to the situation worldwide and to prevent further spread, the WHO's Director-General admitted the possibility of Covid-19 reaching pandemic levels. European countries, such as Italy, saw its situation becoming worse by the hour, closing down public spaces like schools and prohibiting public gatherings, especially in the north of the country (Aljazeera, 2020). However, the Italian case became more serious after a Champions League match in Milan, on the 19th of February 2020, which reunited one third of Bergamo's population resulting on, at least forty thousand supporters on the stadium being infected, which led Italy into "the worst crisis since 1945" (Pacho, 2020) highlighting the Lombardy region as the epicenter of the SARS-CoV-2, in Europe.

Tables turned and China was no longer the epicenter of Covid-19, it was indeed the first country to bounce back from the virus and preparing its community to go back to work registering no new cases in the province of Hubei, deaths and confirmed cases decreasing until the 6th of March 2020, while cities such as San Francisco and the Washington State declared states of emergency and Greece, Norway and Romania reported its first cases (Allam, 2020b). The World Health Organization still was not ready to declare the outbreak as a pandemic (Branswell, 2020) and simply urged countries to define more harsh measures to contain the virus knowing that "the world was headed to a tight corner health-wise" (Allam, 2020b: 26), with 59 affected countries (WHO, 2020c), 87,137 infections, and 2977 deaths worldwide. As many countries continued to battle Covid-19, it was urgent to find or develop an effective treatment for the disease and vaccination was considered a safe, simple and effective way to prevent the infection (Tavilani et al, 2021: 1). Therefore, the development of vaccines started though its "is usually a long and tedious" (Ndwandwe and Wiysonge, 2021: 111) process yet the development of Covid-19 vaccines was "fast-tracked globally" (Tavilani *et al*, 2021) resulting on several options: Johnson & Janssen's, Moderna, Pfizer-BioNTech, Oxford-AstraZeneca, Sputnik V, Novavax and Coronavac (Tavilani *et al*, 2021) with different dosages and timelines for injection. For instance, in the United States of America, four vaccines were approved like Pfizer-BioNTech, Moderna Spikevax, Johnson & Johnson and Covovax, whereas in Europe, mRNA vaccines - Pfizer and Moderna - as well as Johnson & Johnson were the most used (Barouch, 2022). and as scientifically proven, vaccines are not 100% effective though multiple countries have reported a decrease in infections which is a real achievement (Tavilani *et al*, 2021).

Globally, the vaccination started in America on the second week of December 2020, while in Europe the vaccination campaign against Covid-19 begun on the 27th of December 2020, representing a meaningful and singular moment for all (Santos *et al*, 2021). According to Jeyanathan *et al* (2020) it was a remarkable challenge to humanity in this century. Fast-forwarded to November of 2022, Asia held the higher number of administrated vaccines with 8.82 billion, followed by Europe with 1.35 billion, North America with 1.12 billion, South America with 932.78 million, and lastly Oceania with 80.35 million administrated vaccines as also portrayed on the following figure 4 (Our World Data, 2022).

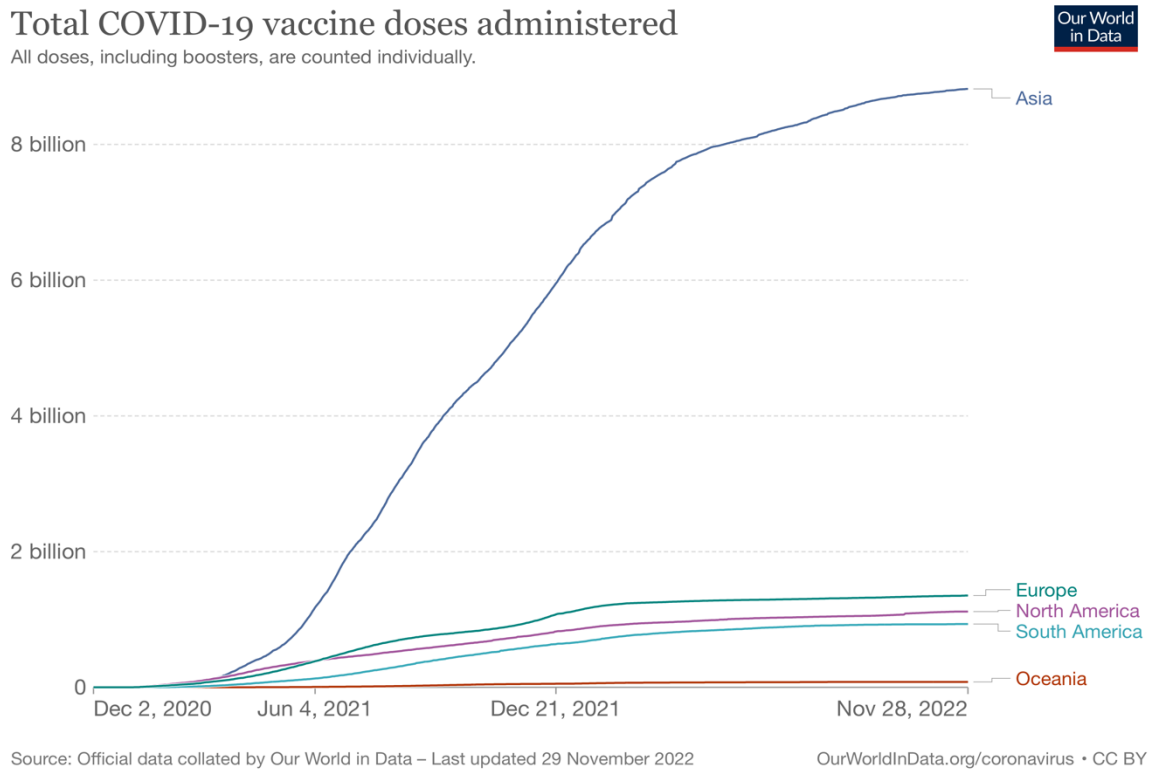



*Figure 4 | Total Covid-19 vaccine doses administrated. Source: Our World Data (2022)*
*https://ourworldindata.org/grapher/cumulative-covid-vaccinations?country=North+America~South+America~Europe~Oceania~Asia*

After almost three years of the Covid-19 pandemic, the virus' longevity has been questioned, which led scientists to make attempts to predict its end. Murray (2022) predicted it to end in 2022 due to the low pathogenicity and high transmissibility of the Omicron variant (Murray, 2022). Also, the UK Government shared three possible scenarios for the end of the Covid-19 pandemic: an optimistic scenario 2022-2023; a middle scenario 2023-2024, which according to Davis (2022) was the most likely option; and a pessimistic scenario which could last until 2026, depending on certain variables as vaccination and testing in the

United Kingdom and worldwide, the ongoing effectiveness of the vaccines, new cases globally, and the possibility of new Covid-19 variants. The World Health Organization believes that Covid-19 pandemic is far from its end and it is likely that new variants emerge (Davis, 2022) although it is hard to predict and further data is necessary to support these evidence (Chen, 2022). Moreover, the pandemic also highlighted the need for structural changes on social, political, and economic spheres (Cunha et al, 2021) with the collapse of national health systems, social inequalities and differential access to medication and vaccines.

### 1.2.2 SARS-CoV-2 in Portugal

In December 2019, concerning news from China started to emerge, reporting that a new type of coronavirus (Wu *et al*, 2020) was manifesting in several countries. The World Health Organization, on 31st of December of 2019, tweeted about a new cluster of pneumonia cases "*China has reported to WHO a cluster of pneumonia cases - with no deaths - in Wuhan, Hubei Province*" (WHO's Twitter, 2019). On the 9th of January 2020, the WHO provided a statement regarding the origin of the uncharted disease, detailing it as a new type of coronavirus with no evidence of possible human transmissibility.

Meanwhile, in Portugal, life continued as usual:

"*the underground in rush hour, shoulder to shoulder, naked faces. At lunchtime, restaurant tables and canteens serve numerous people, many of whom will meet on Sunday at the usual family lunches* (…) " (Duarte *et al*, 2022: 19, 20)

Through national and international social media and television channels, news from China were constant being broadcasted, although no one was aware or prepared for them, and the possibility of arriving in European countries was seen as exaggerated (Duarte *et al*, 2022) as corroborated by Graça Freitas - Health General Director, in Portugal - on the 15th of January 2020: "the possibility of a virus such as this to arrive in Portugal is low" (Graça Freitas, TVI 24, 2020). Between January and March 2020, the coronavirus started to spread out undetectably in multiple countries and while the situation seamed under control in Portugal, other countries such as France, Italy and Spain registered their firsts cases on the last days of January - 3 confirmed cases in France, 2 confirmed cases in Italy, and 1

confirmed case in Spain. Although the virus had not (yet) reached Portugal it was evidently closer than ever. As citizens of the world, it came to the attention that Portuguese citizens beyond borders had been infected such as Luis Sepúlveda, a well-known novelist, journalist, and political activist that had attended a literary festival in Póvoa de Varzim, in the north of Portugal, in February 2020.

The worst scenario had begun, with Portugal registering two positive cases on national ground on the 2nd of March 2020 after the confirmation by the National Institute of Health  Doutor Ricardo Jorge (INSA) (Borges *et al*, 2022). By 12th of March 2020, the Portuguese government announced the suspension of "*face-to-face activities from daycare to higher education, limited access to shopping centers and public services, reduced occupancy of restaurants, closure of bars, and the ban of visits to nursing homes*" (Lopes *et al*, 2021: 18), which contradicted the National Council of Public Health (CNS) advise not to make restrictive measures (Gomes, 2020). However, fear of the unknown took over and the Portuguese government opted to ignore previous recommendations and follow a different path. On 16th of March 2020, Marta Temido – the former Health Minister - revealed the numbers of people infected with Covid-19 summing up to 139 confirmed cases, 18 patients on intensive care and the first death in Portugal, "We must act. Quickly. Because in just over two weeks we may be asphyxiated by such a tragedy" (Duarte *et al*, 2021:32).

According to Almeida and Botelho (2020) the President of the Republic, Marcelo Rebelo de Sousa and the Prime-Minister, António Costa could not agree on the declaration of the state of emergency as the Basic Law on Civil Protection provided the option "state of public calamity". Also, the media revealed its reservations since it was "a constitutional power that had never been used before" (Lopes *et al*, 2021: 40). Nevertheless, on the 18th of March, Marcelo Rebelo de Sousa decreed the first state of emergency in the Portuguese democracy (Lopes *et al*, 2021) which, according with the Resolution of the Parliament of the Republic No.15A/2020 should be declared *a)* on the basis of a disaster situation; *b)* declaration of state of emergency covers the entire national territory, and *c)* The state of emergency lasts for 15 days, starting at 0:00 am 19th of March 2020 and ending at 23:39 pm 2nd of April 2020, without prejudice to any renewals under the law. Still on this day, occurs the second death in Portugal by Covid-19. An unexpected and unimagined confinement would preside over Portugal without knowing its outcome.

An abundant new knowledge regarding coronavirus and mitigation measures peaked on March 2020, during the state of emergency and, for that reason, between the 20th of March until the renewal of the state of emergency - 2nd of April -, the government declared measures such as the compulsory curfew, the mandatory confinement for patients with Covid-19 and for citizens for whom the health authority or other health professionals have determined active surveillance, home-office for those whose jobs allow it, and the suspension of activities in the retail trade, with exception of those that provide basic necessities, or other goods considered essential, among others (Peixoto *et al*, 2020). By the end of March 2020, Portugal registered 7443 confirmed cases and 160 deaths (Ferreira-da-Silva et al, 2022). With the renewal of the state of emergency, on the 2nd of April, extending until the 17th of April and Easter break coming up, more strict measures were declared as the following "citizens may not move outside the county of habitual residence between 00:00 on 9th of April to 00:00 of 13th of April, except for health reasons or other urgent matters" (Presidency of the Council of Ministers, 2020).

April 2020 started with this quote from the President of the Republic, Marcelo Rebelo de Sousa, on a media briefing: "We'll only win April if we don't let our guard down" (Duarte *et al*, 2022: 37). The aim of the message was to transmit comfort and motivation to overcome, once more, the obstacle ahead. Furthermore, face masks started to gain more strength in early April 2020, after dubious and contradictory declarations by Graça Freitas regarding its use "(…) they give a false sense of security. Do not wear face masks (…)" (Graça Freitas, DGS Media Conference, 2020). After the WHO and European Centre for Disease Prevention and Control (ECDC) declared face masks as a priority for health professionals on the front line, the Directorate-General for Health enforced, on the 13th of April, the use of masks to "those who circulate in closed spaces or frequented by many people such as supermarkets, pharmacies, shops, shopping malls and, of course, public transport" (DGS, 2020). Besides, massive testing to the population in general and in nursing homes "legal or illegal" (Duarte et al, 2022: 41) had begun.

By the end of April 2020, Prime-Minister *António Costa* announced, during a media briefing on the epidemiological situation of Portugal, a Deconfinement Plan divided on three phases in order to gradually re-open economical activities with emphasis on local trade activities and later on larger retailers, such as supermarkets. Additionally, the Portuguese

government and Health authorities in charge as the *Infarmed*, the General- Directorate of Health (DGS), and the National Health Service (SNS) alongside infectologists would previously evaluate the epidemiological situation and considered if Portugal could handle a next phase of deconfinement. During May 2020, more specifically in the last two weeks, the number of new infections rose and created more concerns to DGS. The new confirmed cases came specifically from the capital, Lisboa, and from Azambuja and Montijo, surrounding areas to the north and southeast of Lisbon that are major economic hubs, with many industrial facilities. Nevertheless, the last phase of the deconfinement went ahead on the 1st of June of 2020, the region of Lisboa and Vale do Tejo were still a main concern and, as a mitigation measure, shopping malls remained closed and all traditional celebrations were canceled such as Santos Populares, in Lisboa, and São João, in Porto (Duarte *et al*, 2022), culminating on a step back announced on the 22th June 2020 for the Metropolitan area of Lisbon in fifteen parishes and on the 1st of July, to 19 parishes in state of calamity.

August 2020 started off on a positive mark, the first days after 6 months with no deaths by Covid-19, however the number of cases was still rising and overcame the barrier of 200 cases per day, in the second week of August. The epistemological situation was concerning, not only for the government, but also for the health authorities that, on 27th of August, decided to adopt a new preventive strategic to fight Covid-19 (Duarte *et al*, 2022). On mid-September 2020, Portugal recedes to state of contingency, as the President of the Republic affirmed the need to "tighten the health discipline regime" after a Ministers' Council. Although with good intentions, the adopted strategy was not improving the Portuguese scenario that each day would break records on daily cases reaching the unthinkable 7000 cases on the 4th of November and 59 daily deaths (DGS, 2021). During the following weeks, the state of calamity was installed on national grounds and the Government's strategy was to extend harsh measures until Christmas 2020. On the other hand, DGS exhibits the "Autumn-Winter Plan 2020-2021" (DGS, 2020) emphasizing a reinforcement of medical devices, individual protection, medicines, and Covid-19 tests.

Considering the national crisis, Marcelo Rebelo de Sousa, alongside the Government, instituted a new state of emergency established on the President's decree-law no.51-U/2020 (Republic Presidency, 2020) and on the Government decree-law no.8/2020 (Ministers Council Presidency, 2020) beginning on the 9th of November 2020 until 29th of April of

2021, the longest and toughest confinement ever (Duarte *et al*, 2022). Still on this day, a new mark was breached, the higher number of deaths since the beginning of the Covid-19 pandemic, increasing to 63 daily deaths. A new state of emergency was applied on the 24th of November 2020 with specific mitigation measures for the regions with higher incidence, as the obligation of face masks on work locations when there is no safe distancing, night clubs and schools closed, and also the prohibited movement between municipalities between the 27th November 2020 and the 2nd December 2020. "There is a light in the end of the tunnel, but it's still a very long and painful tunnel" (António Costa, 2020). On the 3rd December 2020, the Prime Minister advances the vaccination plan with the purchase of 22 million vaccines that would be phased, universal, optional, and free (Duarte *et al*, 2022). Until the end of December 2020, Portugal would enter in more states of emergency but then branched into four levels of risk - extremely high risk, very high risk, high, and moderate risk - and on 3 levels of restrictions - light, moderate, and severe.

A very popular Portuguese expression "Ano novo, vida nova" translated as "New year, new life" was indeed a much-required outcome for 2020, and it seemed achievable with the administration of the first vaccine against Covid-19 on the 27th December 2020. However, news spread as quicky as Covid-19. On the same day, a new variant of SARS-CoV-2 appeared in the United Kingdom, a "multiple spike protein mutation" (Ferreira-da-Silva et al, 2022) later designed as Alpha caused an unprecedent pressure on health services like SNS (Gonçalves, 2021) due to its 43% to 90% transmissibility rate (Davies *et al*, 2021). By the end of January 2021, SNS was under tremendous pressure (Campos, 2021) with a daily average of 12 890 confirmed cases and a record of deaths, health professionals in burnout, and still with a long way to go. Additionally to the Alpha variant, a new mutation emerged in India, known as Delta variant, which quickly became the dominant variant worldwide with a higher transmissibility and risk of hospitalization (Duarte *et al*, 2022), moreover, according to Our World in Data (2021) Portugal was the country worldwide with the highest cumulative mortality rate on 14 days per million habitants.

January 2021 was not over, and the Parliament approved alongside the President of the Republic, the eleventh state of emergency in the country. It would enter in effect on the 31st January 2021 until 14th February 2021 packed with severe measures, such as border control with limited exits, general confinement, schools closed with distance learning,

among others. The Portuguese situation is of great severity, "(…) images of ambulances clusters at the doors of several hospitals, ascending ratio of infections, hospitalizations and death (…)" (Duarte et al, 2022: 81). The first days of February 2021 were marked by the appointment of Vice Admiral Gouveia e Melo to lead the Task Force as a result of the 340 cases of misuse of vaccines during Dr. Francisco Ramos's previous leadership (Chaíça et al, 2021). Neumann-Böhme *et al* (2020) performed a study with the aim to investigate the willingness of the European population of seven countries, including Portugal, to be vaccinated and shown that 73,9% of the 7664 participants were willing to be vaccinated, however, also discovered that Portugal, France and Germany had the highest rates of uncertainty towards the vaccine (Santos *et al*, 2021) due to potential side effects and safety of the vaccines. Until this point only "0,2% (…) of the Portuguese population" (Duarte *et al*, 2022: 82) were vaccinated with the first dosage and, by March of 2021, "(…) surpassed the mark of one million first doses administered." (Ferreira-da-Silva *et al*, 2022:144) which is equivalent to 9,67% of vaccinated Portuguese population with the first vaccine, and by June 2021, 50% of the Portuguese population had received the first vaccine. The vaccination plan advanced rapidly and with a brand-new vaccination strategy that was considered of an excellent execution with enormous organizational capacity and cooperation between central and regional health authorities with the leadership of the Vice Admiral.

On the following months a certain normality was restored due to the vaccination strategy which resulted in the reduction of confirmed daily cases, hospitalizations, and deaths (Ferreira-da-Silva *et al*, 2022) though, states of emergency were declared until April 2021 and Covid-19 was still active and creating pressure on the Portuguese National Health Service. In mid-August 2021, the vaccination rate reached 66% of the population and on the 1st October 2021 with 85% of the population already vaccinated (Ferreira-da-Silva *et al*, 2022) the green light known in Portugal as "dia da libertação" arose (Ferreira-da-Silva *et al*, 2022: 141), with reopening of night clubs, the end of limited capacity in weddings, cultural events and shows, commerce and tourism. As winter approached and the effectiveness of vaccines decreased the number of infections scaled up *(Naaber et al, 2021),* adding a new variant, Omicron, that diffused rapidly globally only to be the dominant variant, in 2022. Nevertheless, Portugal moved on still with mitigation measures, if necessary, and learnt how to deal with new infections. A new normal had been settled.

## 3. PUBLIC PERCEPTION

Chanley et al (2000), Hetherington (2005) and Martin et al (2020) claim that to gain public's political participation and influence public perception on government's strategies it is crucial to win over an intrinsic sentiment: Trust.

But how does trust change public perception?

Cirtin and Muste (1999) came up with a definition for trust, more specifically political trust, as "confidence that authorities will observe the rules of the game and serve general interest" (p.465), whereas Miller (1974) sees political trust in two separate dimensions: political alienation and political efficacy. Moreover, for the previous author, political trust is an "evaluative or affective orientation towards government" (p.952). For Klein & Robinson (2019) and Festenstein (2020), individuals tend to choose those that they believe have the public's best interest in mind and with whom they share political similarities, leading to different responses from different publics towards a specific event (Kim, 2016: 35) This specific event can be a crisis, as evidenced in several studies, and trust in governments is normally analyzed in comparison to how government's handle crisis (Chanley, 2002; Morckel & Terzano, 2019). Moreover, approaching the public with empathetic communication strategies and risk communication during a crisis should be considered (Seeger et al, 2003; Reynolds & Quinn, 2008), allowing for a more efficient communication that will result on an adherence to the crisis-handling recommendations (Reynolds & Quinn, 2008; Reynolds & Seeger, 2005).

Nonetheless, Ernst et al (2017) understood that the frequency of messages exposed had a correlation to positive influence on credibility among the public. Thus, in health crisis, consistent health campaigns would also influence the public and/or individuals to use safely national health hotlines (Ernst, 2016). The public's communicative behaviour in crisis situations is a rare area of research (Austin et al, 2012) and understanding the public and their communicative behaviour - what is perceived, interpreted, and responded to a crisis (An & Gower, 2009) - is critical to help determine an organization's effective crisis strategies that target different publics (Kim, Kim, & Cameron, 2012a).

"The credibility or believability of a source influences perceptions of information form that source, and vice versa" (Hocevar et al, 2017: 2). Hovland, Janis and Kelly (1953) explored deeper this academic topic, and have developed a theory which implied that positive characteristics of communicators impact the receivers' perception and, consequently, the level of message acceptance, known as Source Credibility Theory (SCT). SCT can be defined as source trustworthiness and expertise (Hovland, Janis & Kelly, 1953) where trustworthiness can be defined as "the degree of confidence in the communicator's intent to communicate the assertations he considers most valid" (Hovland et al, 1953: 21) and expertise as "the extent to which a communicator is perceived to be a source of valid assertations" (Hovland et al, 1953: 21).

Moreover, according to the existing literature, it is demonstrated that this theory has mostly been applied on consumer behaviour, technology, media and information (Serman and Sims, 2022). As so, SCT is grounded in the existence of a relationship between sources that are appraised with high regard and the likelihood for people to respect those sources. In addition, Hummer & Davison (2016) and Pornpitakpan (2004) assert that highly credible sources and their successful communication are often linked to changes in behaviour, which is corroborated by Bickham's et al (2020) proposal that a credible perception of a source can also influence how people respond to information. If the information is conveyed frequently to the public, it is more likely to have an impact on the attitude towards credibility perception of individuals (Ernst et al, 2017). Furthermore, Riech & Danielson (2007)) distinguish three major categories on credibility theory: "credibility of the source, the message, and the medium or channel" (Hocevar et al, 2017: 3) while Schuck and DiBenedetto (2020) state that the primary argument of Source Credibility Theory is that individual's behavioral intention works as a function of cognitive personal and environmental factors.

Over time the information environment shifted, particularly on its dimension, having social media and user-generated online information increasing (Flanagin & Metzger, 2013). Moreover, Jones *et al* (2012) and Li & Liu (2020) detail that social media platforms are great tools to create awareness related to several topics such as health problems and general information about Covid-19. Fogg (2003) determined that SCT in the online environment can have four distinct channels in which credibility may arise: presumed credibility, reputed credibility, experienced credibility and surface credibility. These different contexts aren't

mutually exclusive meaning that the perception of credibility from one channel might evolve to perceived credibility in another channel (Lowry *et al*, 2014). Therefore, specifically on health situations, source credibility used to be based on source credentials, using as an indicator the medical degree or professional experience (Hocevar et al, 2017). However, a user's personal experience with a health issue might develop a level of "perceived expertise" (Hocevar et al, 2017:13) to social media users who share their experiences with a larger audience on social platforms, despite not having traditional credentials that verify the truthfulness of the information (Eysenbach, 2008). Adding, Serman and Sims (2022) indicate that the communicator's intrinsic characteristics are essential for credibility and reliability of the receiver. Further studies have demonstrated that for individuals that might be going through the same health conditions, personal experience information from other patients can have a greater impact on attitudes towards health behaviour (Neubaum & Kramer, 2014).

Moreover, social media contributes and continues to grow in this new health environment, since information is shared by patients or family members on online platforms, enlarging the number of shared testimonials (Flanagin & Metzer, 2013), increasing the information available, and therefore validating that specific information. Also, Lee and Sundar (2013) contributed to this idea by saying that if an accredited source, such as a doctor, posts informational content on a specific social platform with many followers, it is more likely to be credible than a user sharing his/her personal experience. As the perceived credibility, also source credibly on health situation is a very complex matter which has many variations (Hocevar et al, 2017), thus most researchers agree that expertise and trustworthiness are mandatory components on the receiver's perception of credibility (Flanagin & Metzer, 2007).

Furthermore, the existing literature on Public Perception comprises various theories, such as the Situational Theory of Publics (STP) developed by James E. Grunig. For Grunig (ANO) the term public is directly related to public relations, where this specific term is used as a "refer to the mass population" (Heath, 2005: 778) or as to groups of journalists, consumers, governments among others. Kim (2016) defines STP as a theory that aims to "(..) identify who publics are, by explaining why and how they communicate" (pp.38) which corroborates Grunig's definition that "the situational theory is built from an explanation of

why people communicate and when they are most likely to communicate" (Heath 2005: 778).

A main characteristic of STP is that it is ephemeral since problematic situations are fleeting, as is the public, that change as the situation evolves(Heath, 2005). Regarding the characterization of the public, Grunig and Todd Hunt (1984) defined four possible types of publics while combining situational variables: all-issue publics, apathetic publics, single-issue publics and hot-issue publics (Heath, 2005). Kim and Grunig (2011), more recently, proposed a similar theory as an extended and generalized version of STP, called Situation Theory Problem Solving (STOPS). This new theory improved the ideas of Grunig (1997) and aims to understand why and how an individual communicates during problematic life situations having as core ground a more comprehensive and theorical framework known as CAPS - Communicative Action in Problem Solving - detailing the communicative behaviors in problematic situations (Kim & Krishna, 2014).

To Kim and Grunig (2011) individuals are connected as social actors that, in problem solving circumstances, use communicative behaviors (Azlan, 2019), not only seeking information but processing and transmitting it to other individuals. Besides, the CAPS conceptualizes communication behaviors in three segments: information acquisition, selection, and transmission, and each category has a specific component, active or passive (Azlan, 2019). These three segments lead to six communication behavioral variables: seeking and attending - active and passive - in the information acquisition, forefending and permitting - active and passive - in the information selection, and lastly forwarding and sharing - active and passive - in the information transmission (Kim et al, 2010). Grunig (1997) detailed that inside information acquisition there are two variables: information seeking - which is an active communication behavior, where the search for information is constant - and information attending - which refers to the passive component, as detailed above, which finds and processes the information (Azlan, 2019). Therefore, information acquisition - seeking and attending - constitutes the first step into pursuing a solution (Azlan, 2019). Regarding information selection it can be divided into information forefending or information permitting, where forefending is the actual filtering of information, whereas permitting allows the individual to accept the filtrated information to the problem situation

(Azlan, 2019). Lastly, information transmission is the core of STOPS since it is in this segment that information forwarding and sharing begins (Kim &Grunig, 2011).

### 3.1 Risk Perception

"The perception of risk is like the perception of noise, heat or health" (Adams and Smith, 2001:746) and we all have taken risks or, at least, revealed some willingness to take risks. Authors such as Gilbert White, Amos Tversky, Daniel Kahneman, Baruch Fischoff and Paul Slovic, in the last 25 years, have contributed tremendously to the literature of public perception (Gary and Ropeik, 2022). Moreover, risk research aims to understand public risk perception since risk is a crucial element in policy attitudes and decisions (Sjoberg & Engelberg, 2005). For Gray and Ropeik (2022) understanding one's psychological roots is essential to comprehend their fears and, consequently, their emotions which play a crucial role in perception of risk and therefore help authorities as to "craft their actions and messages in ways that address the real reasons people are afraid" (p.100) or as Calman (1996) describes, the perception of risk can be subjective, subconscious, or personality dependent which fails to follow any type of pattern. Following this definition, Adams and Smith (2001) believe that "individuals tend to evaluate risks not solely on statistical data, but rather on many other subjective qualitative aspects" (p.746) which is corroborated by Slovic's (1987) idea that the perception of risk plays a role in the decisions individuals make, knowing that what is a good course of action for some might not be for others. As such, Gray and Ropeik (2022) affirm that risk perception allows to understand that characteristics of risk shape the basis of one's perception.

Weber (2001) analyzed three approaches on risk perception: axiomatic measurement paradigm, socio-cultural paradigm, and the psychometric paradigm. Slovic and Weber (2002) claim that as ordinary physical or chemical processes that contribute to risk are studied, so is the process that affects risk perception. As so, the axiomatic measurement paradigm derives from Markowitz's "normative treatment of risk" (Bontempo et al, 1997: 481) and reflects how individuals can transform risk information into scenarios of how certain events might impact their lives, as death or financial losses. As Bontempo et al (1997) describe it, axiomatic measurement paradigm has allowed to understand that people weigh positive and negative situations differently, and this outcome changes how risk is perceived.

On the other hand, several studies have analyzed socio-cultural paradigm which focuses on the effect that group-level and cultural-level variables have on risk perception (Slovic and Weber, 2002).

The last theory, psychometric paradigm is grounded on one's emotions towards risky situations that might affect not only judgment of riskiness, but also physical, environmental, and material riskiness (Slovic and Weber, 2002). Still, these judgments are related to other properties such as " (i) hazard's status on characteristics that have been hypothesized to account for risk perceptions and attitudes (…); (ii) the benefits that each hazard provides to society; (iii) the number of deaths caused by hazards in an average year; and (iv) the number of deaths caused by the hazard in a disastrous year." (Slovic, 1987: 281). In other words, this theory approaches risk as "multidimensional construct and uses multidimensional scaling, clustering and factor analysis to identify the relevant psychological dimensions" (Slovic and Weber, 2002: 481).

Furthermore, Rogers (1983) and Becker (1974) have contributed to the field of health with two theories: Protection Motivation Theory and Health Belief Model. Both researchers have distinctive proposals for elements of risk perception, such as the subjective probability of contracting a health condition - perceived vulnerability - and the degree to which we are concerned - perceived severity - about its consequences (Rosi *et al*, 2021). In risk communication. Slovic (1987) set forth that risk communication should be established in order to better respond to environmental disasters and pollution, which have significant insights to respond to the risks posed by the new pandemic of Covid-19.

To be better understood and respond to, a health situation such as Covid-19, details that risk perception is driven by two specific elements: hazard and outrage (Sandman, 1987;1989). Besides Paul Slovic (1987) and Vicent Covello *et al* (1988) were the first authors to see potential in psychometric and to explain how perception of hazard and outrage are crucial elements in risk perception (Slovic, 1987; Covello et al, 1988; Fischhoff, 2015). According to Slovic (1987) outrage is considered the emotional response determined by the natural surroundings and the level to which individuals and communities perceive risks and being unsafe that consequently will influence the response, obedience to mitigation measures, and public health messages. The results found by these authors demonstrated that

threats to health are one of many aspects that compose risk perception, but also, factors that can change one's acceptability of risk in different audiences and messages in other contexts. As corroborated by Malecki et al (2021) in regard to wearing mask, the benefits to stop the spread of the disease were known, however one's acceptability and adherence could vary according to its risk perception. Thus Alkhami and Slovic (1994) suggest that when having a relationship linking perception of risk and benefit, it is possible to change perceptions of risk by altering perceptions of benefit, and contrarywise.

Moreover, hazards such as Covid-19 may lead to an emotional response or outrage due to unknown characteristics and fast spread which technical experts define as risk based on quantitative hazard information which includes facts and information on the transmission, mechanisms, and severity of disease (Malecki *et al*, 2021). On the other hand, outrage shapes acceptability and adherence to mitigation strategies (Slovic, 1987; Covello et al, 1988; Fischhoff, 2015) such as social distancing and wearing mask (Malecki *et al*, 2021). Hence, outrage elements shape public risk perception which will allow to determine how and why the public reacts and responds to messages (Malecki *et al*, 2021). The lack of information and therefore familiarity regarding the new and unpredictable disease of Covid-19 might lead to a more anxious public (Fischhoff, 2015). Besides anxiety, this uncertainty can also develop emotions such as stress and fear increasing the difficulty to dismiss risk, and the adherence to mitigation strategies from governments and health authorities (Malecki et al, 2021). Gilk (2007) and Fischhoff (2015) assert that having the public trust in institutions helps to manage risk communication when reliable information is provided, but also "empower more-effective risk communication and help people to keep their concerns in perspective" (Gray and Ropeik, 2002:110) though awareness is not only generated by institutions or the media, since it can also be from personal experience and conversation (Kasperson et al, 1988).

Rossmann *et al* (2018) argue that as the pandemic develops itself and becomes more intense it is essential to engage with the public and have effective risk reduction, mitigation, and ultimate control, however it is acknowledged that, being an uncertain disease, conflicting information and constant changes in the messages conveyed to the public might be challenging and consequently shift the public perceptions (Rossmann et al, 2018; Hills, 2019). To that end, risk perception research allows scholars to fully understand how

individuals determine what to be afraid of and how afraid to be, but also helps to explain most of one's responses towards risk situations, as affective response - emotions, values or instincts - to internal and rational risk analysis (Gray and Ropeik, 2002).

# II. EMPIRICAL RESEARCH

## 1. Methodological Strategy and Design

According to Quivy and Campenhoudt (1998) an investigation is, by definition, a process of search, a walk towards new knowledge, knowing that obstacles might appear in the way. The research process incorporates three distinctive phases: the conceptual phase, the methodological phase, and the empirical phase (Fortin, 2009). Moreover, Quivy and Campenhoudt (1998) elaborated a conceptual framework of the process of an investigation which includes seven phases: research question, investigation, problematic, construction of an analysis model, observation, data analysis and conclusions. Having completed the conceptual phase - definition of the research question and literature review – it is viable to proceed to the methodological phase.

As described on the introductory chapter, this dissertation aims to analyze the *modus operandi* of health authorities on the communication strategies implemented to mitigate Covid-19 infections during the pandemic, as well as the public perception, using Portugal's context as its fundamental grounding. After a careful understanding of the main objectives for this project, the research question elaborated is: "**What was the crisis communication strategy followed by the Portuguese authorities during the first two years of the pandemic, and how did it impact the Portuguese Millennial and Z generation?**".

Bearing this in mind, the methodological design of this investigation is grounded on mixed-methods research. By definition, mixed methods involve the usage of qualitative and quantitative research, where quantitative research involves that collection and analysis of numerical data, whilst qualitative research focuses on experiential data (Hayes *et al*, 2013). When choosing the right methodology to apply, Creswell and Clark (2011) mention how important it is to decide based on the value of using both methodologies - mixed-

methods - to answer the research question, into which Andrew and Halcomb (2012) affirm that the research questions that best suit a mixed-methods approach are those which have multiple perspectives within a single study providing the researcher deeper insights on the specific problem. Adding to this, Zhang & Creswell (2013) approach the importance of combining data on mixed-methods and identify three procedures for mixing data within the methodology design: integration, connection, or embedding.

As so, taking into consideration the research questions and how the data will be analyzed, the model of mixing chosen is integration which, by definition, means that qualitative and quantitative data collection are developed and analyzed separately whilst the integration occurs on the interpretation of the data (Zhang and Creswell, 2013). Thus, Fortin (2009) explores that, within the methodological phase, "the researcher follows a rational process that leads him to go through a series of steps, going from the definition of the research problem to the measurement of the concepts and the achievement of the results" (Fortin, 2009: 20).

Having in mind the previously detailed conceptual grounding, the research question can be divided into two segments: "What was the crisis communication strategy followed by the Portuguese authorities during the first two years of the pandemic?" and "How did it impact the Portuguese Millennial and Z generations?". In this sense, the first segment of the research question: "**What was the crisis communication strategy followed by the Portuguese authorities during the first two years of the pandemic?"** will follow a qualitative approach since qualitative designs are "focused on particular individuals, events, and contexts, lending itself to an idiographic style of analysis" (Gerring, 2017: 18). Adding, Creswell (2014) exposes many qualitative approaches that have become more visible on the last century, such as Clandinin and Connelly's (2000) narrative research, Charmaz (2006) and Corbin and Strauss's (2007) grounded theory, Moustakas's (1994) phenomenological research, Wolcott (2008) and Fetterman's (2010) ethnographic research and lastly, Yin's (2009, 2012) case study research. Furthermore, qualitative research stands out on investigation in health research providing essential insights. Pope and Mays (1996) and Pathank *et al* (2013) describe that in health research there are three categories of qualitative research: observational studies, interview studies, and documentary/textual analysis of various written records, which in fact help to understand health related issues.

As so, in order to provide answers to the first segment of the research question, the methodological strategy to follow is grounded on documentary/textual analysis on the case of the Portuguese Authorities' strategy to fight Covid-19, in Portugal.

On the other hand, after gathering definitions on quantitative approach from several authors, Creswell (2005), Fortin (2009) and Nardi (2018) describe quantitative research as a method that allows a better understanding of a situation or event focusing on describing and explaining the phenomenon under investigation. In this sense, it is a collection of observable and quantifiable data which provides to describe, explain, or even control variables of interest such as individuals' attitudes, opinions, behaviours and other characteristics on surveys and/or in in-depth interviews.

Moreover, Fraenkel *et al* (2012) defines the quantitative approach as a singular perspective that functions under pre-determined steps that lead the research process. Besides, Mertler (2016) reports that there are several approaches to conduct quantitative research: nonexperimental research designs and experimental designs. Within nonexperimental research designs there are three types: descriptive research, observational research, and survey research - correlational research and causal-comparative research (Mertler, 2016). Still, Nardi (2018) exposes the advantages of the quantitative approach: being ideal to ask for opinions and attitudes while guaranteeing anonymity to which respondents can answer on their terms, for probability sampling but also ideal for developing computer-based and online surveys with standardized questions.

As such, the second segment of the research question "**How did it impact the Portuguese Millennial and Z generation?**" will follow a quantitative approach developed through nonexperimental design, an online questionnaire which is described as an intellectual operation that involves patience, creativity and collaboration (Nardi, 2018). Still, Fraenkel *et al* (2012) and Nardi (2018) add that questionaries are suited to achieve large numbers of answers that represent characteristics of individuals or a group that would be difficult to observe utilizing qualitative methods. Therefore, the reason behind choosing a quantitative approach for this specific segment of the research question consists of different motives, firstly it is the most suitable method to understand comprehensively the Millennial

and Z generations perception on the implemented communication strategy, used in Portugal, by the Portuguese authorities, during Covid-19 pandemic .

## 2. Population and Sample of the Research

Taking into consideration the nature of this investigation as described on the introductory chapter, as well as the methodological design chosen - quantitative approach - utilizing nonexperimental research design - descriptive research - survey research is the most suitable research design. According to the author Mertler (2014) a descriptive research allows the researcher to collect, describe, and interpret individuals' current status, settings, conditions, or events. Being more specific about survey research, this technique evolves the researcher to develop a survey or questionnaire to a sample that statistically represents the population under investigation.

In order to provide reliable data into the study it is fundamental to have a statistical representative sample which is supported by Huot's (2002) table of sample dimensions to determine the number of respondents to have a representative sample of the Portuguese millennials and generation Z. After consulting *Pordata*, a certified statistical database about Portugal and its Municipalities, it was establish that the combined number of the population in study was over 100 000, as presented on the last row of the table 1, which indicates that having N=100 000 equals to n=384. In other words, the minimum number to have valid and statistically representative sample is 384 responses.

| N | n | N | n | N | n | N | n | N | n |
|---|---|---|---|---|---|---|---|---|---|
| 10 | 10 | 100 | 80 | 280 | 162 | 800 | 260 | 2 800 | 338 |
| 15 | 14 | 110 | 86 | 290 | 165 | 850 | 265 | 3 000 | 341 |
| 20 | 19 | 120 | 92 | 300 | 169 | 900 | 269 | 3 500 | 346 |
| 25 | 24 | 130 | 97 | 320 | 175 | 950 | 274 | 4 000 | 351 |
| 30 | 28 | 140 | 103 | 340 | 181 | 1000 | 278 | 4 500 | 354 |
| 35 | 32 | 150 | 108 | 360 | 186 | 1100 | 285 | 5 000 | 357 |
| 40 | 36 | 160 | 113 | 360 | 191 | 1200 | 291 | 6 000 | 361 |
| 45 | 40 | 170 | 118 | 400 | 196 | 1300 | 297 | 7 000 | 364 |
| 50 | 44 | 180 | 123 | 420 | 201 | 1400 | 302 | 8 000 | 367 |
| 55 | 48 | 190 | 127 | 440 | 205 | 1500 | 306 | 9 000 | 368 |
| 60 | 52 | 200 | 132 | 460 | 210 | 1600 | 310 | 10 000 | 370 |
| 65 | 56 | 210 | 136 | 480 | 214 | 1700 | 313 | 15 000 | 375 |
| 70 | 59 | 220 | 140 | 500 | 217 | 1800 | 317 | 20 000 | 377 |
| 75 | 63 | 230 | 144 | 550 | 226 | 1900 | 320 | 30 000 | 379 |
| 80 | 66 | 240 | 148 | 600 | 234 | 2000 | 322 | 40 000 | 380 |
| 85 | 70 | 250 | 152 | 650 | 242 | 2200 | 327 | 50 000 | 381 |
| 90 | 73 | 260 | 155 | 700 | 248 | 2400 | 331 | 75 000 | 382 |
| 95 | 76 | 270 | 159 | 750 | 254 | 2600 | 335 | 100 000 | 384 |

*Figure 5 | Sample dimension. N= Population dimension; n=sample dimension. Source: Huot (2002)*

As so, an online survey was developed and conducted through an online platform - Google Forms - structured on four phases, with different types of questions in order to fully understand the phenomenon in study. According to Levy and Lemeshow (1999) it takes two phases to generate a survey design: sampling plan and procedures to obtain the desired response rate. The sampling strategy chosen while being used more frequently on qualitative research, has been gaining more ground on quantitative research being associated with social media networks (Parker *et al*, 2019). On the account of its characteristics the "snowball sampling has become a popular means of recruiting research participants" (Parker *et al*, 2019: 4). The snowball sampling is a nonprobability method of survey sample selection that is "constructed from a base of initial contacts, who are asked to provide introductions to their associates, who, in turn, are asked to refer others" (Wright and Stein, 2005: 495). In order to have access to the survey, invitations were sent out via digital social networks - WhatsApp, Facebook, Instagram and LinkedIn - using a snowball technique to gather the sample.

The time frame of the online survey was 5 days (December 15th and December 21st of 2022) achieving a total number of 439 answers. The online survey was available, during this period of time on the researcher's Instagram and Facebook page as well as being shared on various groups on WhatsApp. Regarding the invitation, it was written under a non-formal type of speech encouraging individuals to participate and disseminate the survey to their contacts, which had no compensation for participating. Also, the online survey guaranteed the individuals confidentiality and anonymity. The online questionnaire included questions on several elements developed during the literature review, as for instance, the trust in the Portuguese Government and DGS.

## 3. Data Collection

### 3.1 Qualitative approach

Taking in consideration the research question proposed for this dissertation and thereafter analyzing its form, it is possible to affirm that its composed by two variables: "What?" and "How?". According to Pope and Mays (2006) and Green and Thorogood (2014) qualitative research has as focal objective to answer to "how", "why", and "what" questions as, for example, "what is X and how does X vary in different circumstances, and why?" (Pope and Mays, 2006: 3).

Qualitative research distinguishes itself for its methodological research designs due to its need of interpreting social phenomena which include interactions and behaviors using "language as its data, be it written or oral, although it may use photos, videos, or other types of behavioral recordings" (Haven & Grootel, 2019: 232). Pope and Mays (2006) share Haven & Grootel's view on qualitative research design adding that it also may include direct observation and interviews which is why it is considered as an interpretative research (Pope and Mays, 2006). Furthermore, McLeod (2019) explains that the origin of the qualitative approach was a response to psychology investigations, specifically behaviorism which means "being more interested in human behaviour and actions rather than how humans' constructs meaning and interpret different events" (McLeod, 2019: 39).

Within the qualitative methodology there are a number of methods to approach depending on the questions - "How", "Why, and "What" - that formulate the research question. Yin (2009) describes during his investigation on case study methodology when and which method to apply in an investigation. Firstly, five methods stand out: Experiment, Survey, Archival Analysis, History, and Case Study which then are determined by three conditions: (1) "Form of Research Question?", (2) "Requires Control of Behavioral Events?" and (3) "Focuses on Contemporary Events" as observable on the figure 4.

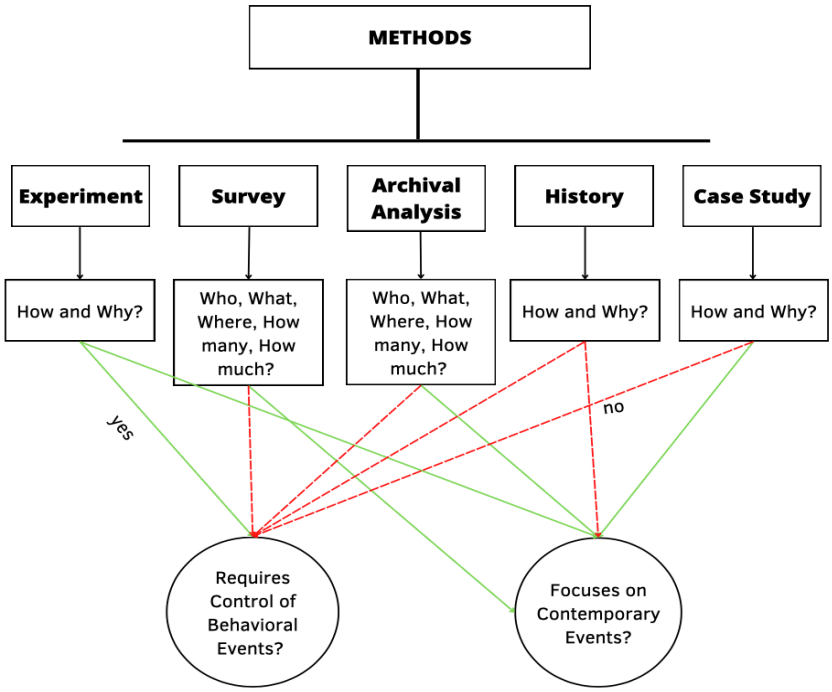



Figure 6 | Relevant Situations for Different Research Methods. Adapted from Cosmos Corporation in Yin (2009: 8)

After analyzing the illustrated model above there are two forms of research questions that immediately stand out: (1)"How and Why?" and (2) "Who, What, Where, How many, How much?". Depending on its form the possibilities change, as for example, (1) "How" and "Why" questions are considered as explanatory which means that the use of case studies, histories, and experiments are more likely to produce better results, since "How and Why" require to be traced in time. On the other hand, the (2) second form of research question is composed by "what" questions that lead to different methodological approaches. If the research question focuses on "what", it means the use of exploratory studies: development of hypotheses, propositions, exploratory survey, exploratory experiment and exploratory case study. Regarding the "what" question in "How many, How much" and "Who, Where?" form it is more likely the use of surveys or archival methods rather than the others (Yin, 2009).

As so, the qualitative approach will be grounded on inputs from Yin's (2009) case study methodology. The case study approach has been reviewed for this investigation however it will not be processed as a case study methodology since the main goal for the qualitative approach is to obtain more relevant data to then confront with the online survey results.

### 3.2 Quantitative Approach

According to Ponto (2015) survey research is mostly known for including sizeable population-based data collection, having as the upmost purpose to collect information regarding a large group's characteristics. Moreover, Burns & Bush (2014) admit that when collecting a large volume of data efficiently within questionnaires, a significant sample is in order. Thus, according to the previous authors there are five advantages into using questionnaires: (a) standardization, (b) ease of administration, (c) ability to ask questions about motivations, circumstances, events or mental deliberations, (d) suitable for statistical analysis and lastly (e) possibility of dividing respondent into segments or subgroups. Nonetheless, to Fowler (1995) "good survey questions must be feasible to answer and respondents must be willing to answer valid measures of something we want to describe" (Fowler, 1995: 3) in which the researcher must avoid questions to which is hard to collect data from the respondents or "assume that the respondent knows something about the subject (Salant & Dillman, 1994: 98). As so, the survey questions must produce answers that are viable and valid so that the phenomenon can be explained.

Furthermore, Youngman (1982) has presented to the academia how to design a questionnaire, which include seven types of questions: (a) Verbal, (b) List, (c) Ranking, (d) Scale, (e) Quantity and (f) Grid. Whereas Ponto (2015) details that, on survey research, it is appropriate to use quantitative research strategies as numerically rated items, qualitative research strategies as open-ended questions or both strategies. Developing Youngman's (1982) proposal, (a) Verbal or open questions, where the response can be either a word, a phrase or a comment, (b) List, where the respondent has a list of items and can choose multiple options, (c) Ranking where the main objective is to ask the respondent to rank, in order, specific items, (d) Scale has many derivations, as nominal or ordinal scale, (e) Quantity which the response is a number, and (f) Grid that provides answers to two or more questions at the same time (Bell, 2010). Still, questionnaires have open-ended and closed-ended questions (Salant & Dillman, 1994); open-ended questions give the respondent freedom to answer and provide the researcher with new ideas "where additional insights are sought" (Salant &Dillman, 1994: 81) on the other hand, closed-ended questions can be distinguished into three types - ordered choices as Likert scale or nominal scale that

according to Glasow (2015) are the easiest for the respondent to provide answers and also easier for the researcher to make conclusions, unordered choices as multiple choice questions and lastly, partial closed-ended questions that allow the respondent to compare responses and select one, or write in "other" (Salant & Dillman, 1994: 84). Moreover, questionnaires also may include several questions that provide instrument validity and reliability as demographic questions (Mellon, & Beck, 2010)

Bearing this in mind, the online survey developed to analyze the modus operandi of health authorities on the communication strategies implemented to mitigate Covid-19 infections during the pandemic, as well as the public perception using Portugal's context had the following structure: (1) Introduction to the survey, (2) Information Sources about Covid-19, (3)Trust, Clarity and Efficacy of the Government and Health Authorities Communication Strategy, (4) Adherence to Covid-19 mitigation strategies and (5) Demographic questions.

## 4. Data Analysis

### 4.1 Qualitative analysis - The case of the Portuguese authorities' communication strategy to fight SARS-CoV-2 pandemic

**The Portuguese Government's communication strategy**

Covid-19 communication has become, during the pandemic, one of the main concerns for national and international institutions that provide accurate information to political decision-makers to implement mitigation and health measures in order to prevent the spread of the infection (Cunha *et al*, 2021). This health crisis created a disruption on how to communicate effectively, bringing back television which had been considered "dead" by many authors (Katz & Scannell, 2009), providing updated information and filling the prime-time slots, which made it become, once again, the dominant medium (Cabrera *et al*, 2021). Indeed, the XXI century has shown how information consumption can change, mainly due to the convergence and mobility of the digital world posing as a threat to traditional means of communication such as journalism (Zelizer, 2019) which Casero-Ripollés (2020) emphasizes that "the appearance of new consumer habits is changing how citizens attribute relevance to current topics" (2020: 3). In fact, according to a Portuguese daily newspaper of national reference - *Jornal Público* - television audiences broke records during the Covid-19 pandemic, particularly due to the daily political decision-makers press conferences with the President of the Republic, the Prime-Minister, DGS (Direção Geral da Saúde) and the Minister of Health (Cardoso, 2020). Television, consequently, faced a new role as a social link (Wolton, 1994), a "window to the world" (Cabrera *et al*, 2021: 189), and the new social intermediary (Cunha *et al*, 2021).

However, the plurality of information sources impelled citizens not only to rely on traditional means of communication but also on social media platforms such as Facebook, WhatsApp, or Twitter (Digital News Report, 2019) which brought the truthfulness of sources and information into question. Considering the uncertainty felt during the first months of the pandemic, a massive proliferation of information caused difficulties in the recognition of what was true or false (Cabrera *et al*, 2021) which, according to the authors Ireton & Posetti

(2018) and Wardle and Derakhshan (2017), can be described as “information disorder”. “Information disorder” is a convoluted phenomenon that approaches two dimensions - falsity and intention - and includes three types of information - mis-information, dis-information and mal-information (Santos *et al*, 2021) - as observed on figure 5.

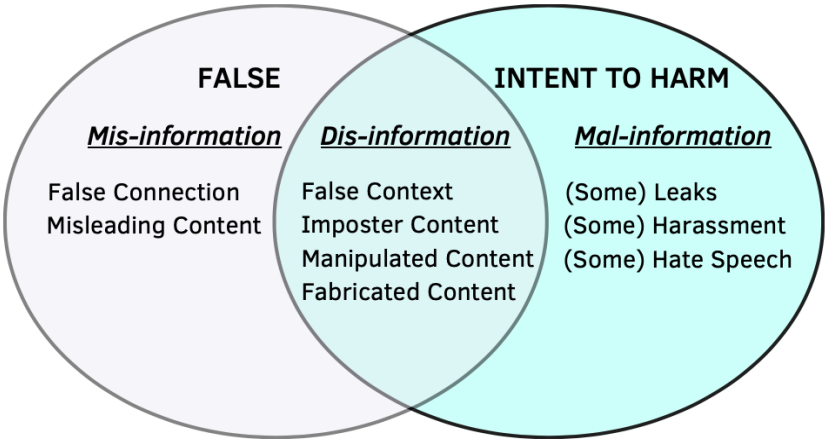



Figure 7 | "Information disorder" concepts. Adapted from Ireton and Posetti (2018)

Ireton and Posetti (2018) explain that misinformation and dis-information are based on falseness of information thus misinformation has no intent to harm and thrives on false connection - clickbait headlines - and misleading content where the disseminator truly believes in the information. Dis-information is composed of imposter, manipulated, and fabricated content and therefore prone to harm, a “(…) deliberate, intentional lie” (Ireton and Posetti, 2018: 46). On the other hand, mal-information is based on reality though with the main objective of inflicting harm on a person, organization, or country, a “true information that violates a person’s privacy without public interest justification” (Ireton and Posetti, 2018: 46). Hence, in the Covid-19 context, the circulation of misleading information, especially on social media (Cinelli *et al*, 2020), could undermined mitigation measures while promoting ineffective health measures (Mheidly & Fares, 2020) ensuing the WHO to classify it as an “infodemic”, a situation referring to rumors and misinformation, manipulation of information with dubious intent (Lopes *et al*, 2021b), ultimately a “global epidemic of disinformation” (Zaracostas, 2020).

Aligning with the central theme of this research, the Portuguese communication strategy in the context of Covid-19 pandemic started on the 15th of January 2020, thus unconsciously, with declarations of Graça Freitas, the Director General of Health claiming that "the probability of a virus such as this to arrive in Portugal is low: Even in China the outbreak was contained, for the virus to reach Portugal it would be necessary to have someone of the affected area, in Portugal" (Graça Freitas, TVI 24, 2020). Shortly after this statement, the number of confirmed cases in Europe gained an unexpected dimension, neighboring countries report their first cases, which meant that it would reach Portugal at any time soon leading the media to gradually give more emphasis to the topic (Cunha et al, 201). Later on, DGS published a guideline to implement on businesses regarding prevention and containment measures, but also the Portuguese government sent out a dispatch to public services to prepare contingency plans (Cunha et al, 2021).

The declaration of Covid-19 as a pandemic by the WHO (Lopes et al, 2021), on March 11th of 2020, which led the Portuguese government to take action, announcing the suspension of high schools and universities activities in a first instance (Lopes et al, 2021), measures which the Prime Minister António Costa, believed to be "a necessary struggle for our own survival and for the protection of the Portuguese people's lives" (Lopes et al, 2021: 30). The Government took other measures such as launching a website - covid-19 estamos on - with a practical guide to support citizens, families, and companies fighting the effects caused by Covid-19, providing support as well as documentation and the exceptional measures adopted by the Government in each government area. Another novelty was a reserved area for questions and answers FAQS (Informação à Comunicação Social, 2020) which, according to Magro (2012) and Dadashzadeh (2010), using social media in disaster management is a crucial role for governments since it provides access, engages, and educates all citizens but it also improves the governments' transparency and allows the citizens to "talk back" (Santos et al, 2021).

The media took upon this as a collective cause, playing a central role in any public health emergency (Lopes et al, 2021b) leading a Portuguese weekly newspaper - *Jornal Nascer do Sol* - to encourage the Portuguese citizens to stay at home with the original headline "Fique em Casa!" as observable on image 2, which rapidly turned viral and into a hashtag, present on social media, television, and radio. The journalistic discourse has proven

to be an important asset of information transmission but also for the improvement of the disease's awareness when the first state of emergency was declared and people were asked to stay at home (Lopes et al, 2021b).


*Image 1 | Cover of a Portuguese weekly newspaper, Jornal Nascer do Sol: "Stay at Home!"*

## DGS communication strategy to combat SARS-CoV-2 pandemic

As for the communication strategy implemented in Portugal, DGS was responsible for the coordination of the communication process alongside different Ministries and other levels of Public Health Services as Regional Health Administrations (ARS) and the Autonomous Regions (RA), resulting on a partnership between DGS, WHO, and the European Centre for Disease Prevention and Control to launch the National Plan for the Preparation and Response to the New Coronavirus Disease (Correia *et al*, 2020).

This plan had as main purpose to prepare the response and to minimize the impact of Covid-19 pandemic in Portugal, in which the main steps were the collection and processing of data on the evolution of the outbreak, the production of communication strategies, the validation of information, the dissemination of information of public interest, the communication monitoring, as well as campaigns to fight misinformation mainly on social media platforms (DGS, 2020). Concerning the communication strategy in specific, its purpose was: to ensure an effective communication before, during, and after the public health emergency; to provide information to influence the population's behaviour; and to avoid panic and minimize social disruption. Its structure combined three strategic axes: Internal communications, External communications and Social mobilization (Plano Nacional de Preparação e Resposta à Doença por novo coronavirus, 2020).

DGS guidelines regarding internal communication were clear, since its role was to be a tool for managing teams while promoting coordination on different administrative and regional levels. However, to be effective, there must be an internal and interinstitutional flow of information, defined functions for each member of the communication team, established contact lines with experts from specific areas, and situational status and coordination meetings on specific timelines (Plano Nacional de Preparação e Resposta à Doença por novo coronavirus, 2020).

Moving onwards to the external communication strategy, its main responsibility was the dissemination of information in each phase of the pandemic through situational feedback for the population, health literacy promotion, and population risk perception (Cunha et al, 2021) which were converted into a six measures plan: (1) Covid-19 webpage within the official Health Minister website (https://covid19.min-saude.pt); (2) daily press conferences broadcasted live on Facebook (Ramos & Jerónimo, 2020); (3) a daily epidemiological bulletin published on DGS's website and Facebook (image 3) - with the number of total cases since 1st of January of 2020, total confirmed and non-confirmed daily cases, on hold for lab confirmation, recovered cases, on active surveillance, imported cases, transmission chains and deaths; (4) guides for health organizations and professionals, citizens, and private agents (Cunha et al, 2021) translated in multiple languages and also disseminated through other informational channels (Plano Nacional de Preparação e Resposta à Doença por novo coronavirus, 2020). Adding to these, (5) the creation of social media platforms - Instagram (Ramos, 2015) and an update Facebook page to communicate with the Portuguese population. Lastly, DGS, in September of 2020, launched the (6) app *StayAway Covid* (image 4) which had as main purpose to anonymously monitor Covid-19 infections and alert those who had been in closer contact with positives cases (SNS, 2020) however it did not have the expected impact (ECO, 2021) and the Portuguese citizens were advised to uninstall the application.

To Marques (2020), Instagram's goal was to interact and engage with the audience in a subtle way, however, this social media platform has changed over time and is nowadays used not only to interact with its audience but also to promote businesses by communicating creatively and authentically in order to retain the user's attention. Instagram has the following main features: to create a personal or professional account - professionals accounts

have specific characteristics to permit statistical analysis; to publish photography's and video until 60 seconds; to create stories through images, videos or live streaming videos; to add hashtags; to receive and send direct messages; to archive posts; to create photographic albums and lastly, to design a small bio to introduce the business to those visiting the Instagram page (Marques, 2020). On the other hand, Facebook is the largest and most popular social platform counting with more than 83% of Portuguese users that through a smartphone, mobile phone, or computer have access to the network (Marques, 2020). Similarly to Instagram, Facebook promotes an engaging communication through direct and private conversations and by publishing public status/posts, thus, sharing videos, images, and animated gifs is also a possibility of this social network. Facebook also has the feature to create a professional account and updated information's in real time to "friends" within the network (Correia & Moreira, 2014).

Taking into consideration the new social dynamic provided by the outbreak of Covid-19 - mainly social distancing and full lockdowns - Fullerton (2021) detailed the rise in social media interactions during the first wave of Covid-19 had grown by 61%. Moreover, Facebook and Instagram noticed an increase in new accounts creation, highlighting Instagram's reach of 1 billion users representing a 22,9% increase year-over-year (Emarketer, 2020). After briefly analyzing DGS's Instagram and Facebook - appendix 2 - the presence in both social networks was quite active, though in terms of followers Facebook counted with 831K and a larger engagement than Instagram, that registered 72K followers - also due to its recent creation (March 20th, 2020). Concerning frequency and types of posts on Instagram and Facebook they differed in numbers, having a clearer presence on Facebook rather than in Instagram. About this, Ribeiro (2020) remarked that "the highest incidence of approach of the Facebook page of the institution is about Covid-19, which represents a majority in publications about the disease" (p. 9) (image 4). Regarding the types of posts on Instagram and Facebook "each review post contains an image, written text with emojis, hashtags and comments" (Ribeiro, 2021:10) which corroborates Santaella's (2007) approach on the three major matrices of language: written, visual, and audio; the combination of these types of digital language were present in most of DGS's publications on social networks. Therefore, the importance of communication strategies within health crises situation - mainly the relation between health institutions and the media - is highlighted so that there is

an integrated communication which aligns with the National Plan for the Preparation and Response to the New Coronavirus Disease, detailed above (Ruão, 2013).

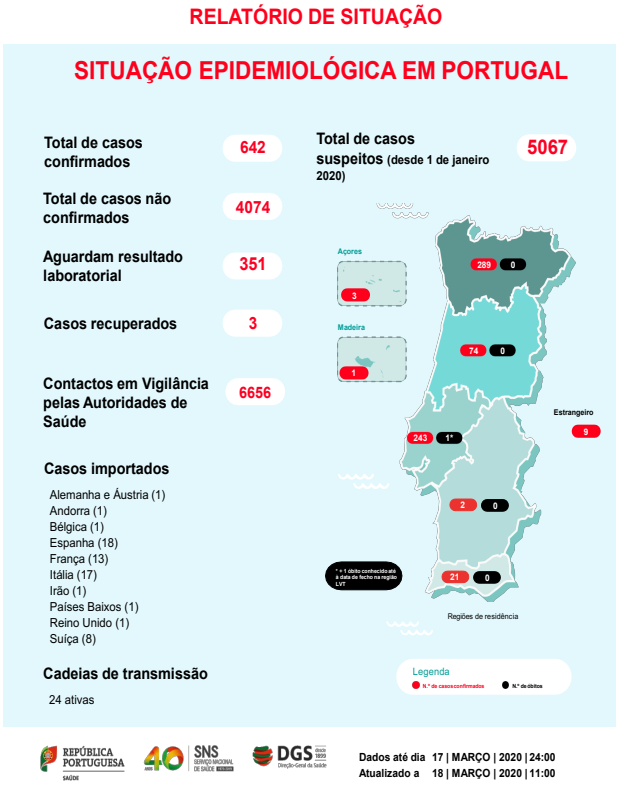



*Image 2 | Epidemiological Report. Source: DGS website (2020)*


*Image 4 | Facebook Post that illustrates Covid-19 mitigation measures. Source: DGS's Facebook (2020)*


*Image 3 | App StayAway Covid Source: DGS website (2020)*


*Image 5 | Facebook Post illustrating how to social distancing. Source: DGS Facebook (2020)*

Additionally, Diana Mendes, DGS's Head of Communication and Public Relations, on the Webinar "*Conversas em rede em tempos de Covid-19*", shared that "it has been a huge challenge for health authorities" and that "the communication process is as complex as the measurement process" (Diana Mendes, 2021). Still, Diana Mendes disclosed that the communication strategy followed by DGS had multiple tactics and communication cycles, from the containment to the mitigation strategies, having in mind that "the need of clear messages is not compatible with the speed of scientific knowledge and generates contradictory or apparently contradictory messages" (Diana Mendes, 2021).

Moreover, a good and effective communication is the central piece on every crisis (Lopes et al, 2021) and, in risk situations, governments and health authorities have a fundamental role in defining communication strategies that ought to persuade the right attitude from the community and create civic involvement (Harring et al, 2021) which is why DGS also made an agreement with channels on national television - RTP, SIC, TVI and CMTV - and its pivots - João Adelino Faria (RTP), Pedro Pinto (TVI), Clara de Sousa (SIC) and José Carlos Castro (CMTV) in order to disseminate quality and accurate information about the pandemic creating a movement called "Somos todos uma voz" (image 7) - We are all one voice - to ensure that as many people possible had access to information that might save lives, "we need creativity to regain that attention. Even with serious matters and when it is necessary to pass on important information" claimed Serginho Lobo, Lola Normajean Creative CEO (Marketeer, 2020).


*Image 7 | Campaign "Somos Todos Uma Só Voz" - DGS and Pivots RTP, SIC, TVI and CMTV partnership. Image modified by the author.*

Furthermore, a study from Marktest (2020) discovered that the Portuguese gave more credibility to reliable sources such as television rather than social media, reaching 64% of viewers on broadcast emissions with 86% degree of confidence. After traditional media, this study revealed that official government websites registered 46% of demand and 57% of confidence (Marktest, 2020). Yet, this study also presented that, after the 18th of March, the Portuguese population increased their consumption of information resorting more regularly to traditional media, such as television, press, and government website platforms. Nonetheless, according to Meveret *et al* (2014) low levels of confidence could lead the public to distance themselves from the health system and consequently to create careless and non-compliant situations, which could result in serious consequences for the public health. Tough Gonçalves's et al (2021) investigation shown that there were two opposing perceptions regarding the government's communication. On a positive outcome, the majority of the respondents claimed that the government information was scheduled at the appropriate timing and was reliable information putting their trust into government and DGS. However, according to the study's results, the WHO is the most trustworthy source, followed by renowned experts in the health area and lastly the government and DGS (Gonçalves et al, 2021).

To Glik (2007) a carefully designed crisis communication strategy plays an important role into the prevention and mitigation of health situation as a pandemic which may help to reduce emotional factors such as anxiety and fear but also support public adherence to recommended mitigation measures and increase the effectiveness of medical feedback.

To detail about how the Portuguese crisis communication was designed was approached in the theoretical framework with Timothy Coomb's SCCT which includes strategies as denial, diminish, rebuild, and bolstering (Coombs, 2018, Coombs, 2007). These strategies serve to reduce the public's blame attributions, improve perceptions of the organization, and to alleviate negative emotions (Richards et al., 2017). However, there is not a parallelism between the mentioned strategies and the reality of the Portuguese situation which leads this investigation to adopt other strategies. Taking into consideration that "pandemics move quickly, and the early stages are sensitive to assumptions regarding public health interventions" (Rozell, D., 2020: 129) the following figure details how Malecki

*et al* (2020) perceive crisis communication and develops strategies to control Covid-19 successfully.

Throughout Malecki's *et al* (2020) investigation, to reach an effective communication, it is necessary to develop "clear, simple and appropriate messages" (Malecki *et al,* 2020: ?) so that the public audience can have their needs directly addressed by the authorities and help to diminish fear, anxiety and misinformation. Therefore, there are four steps into approaching crisis communication during Covid-19 pandemic: **Plan and Prepare**, which represents the management of pre, during and post crisis; **Address Outrage** which conveys the information to transmit to the public, which channels to communicate from, and to understand the audience's feelings; **Address Hazard** aims to detail personal actions to fight Covid-19, expert strategies and how to address the population. Lastly, **Engage Audience** approaches both steps Address Outrage and Hazard when it concerns the audience.

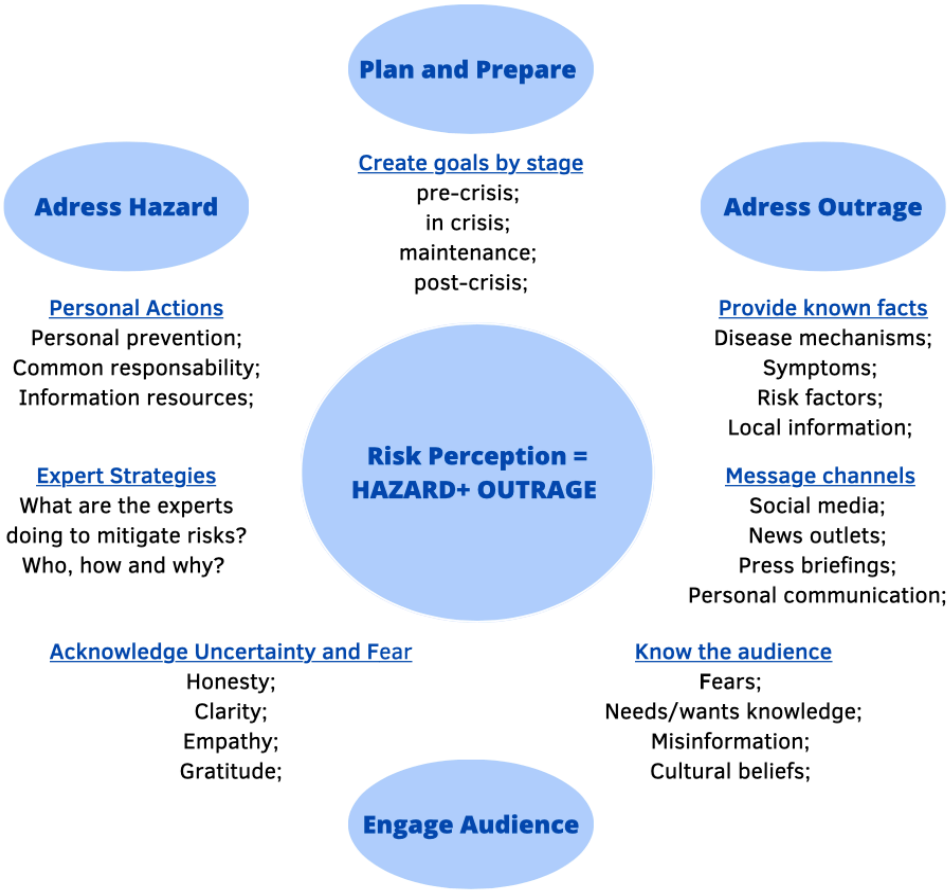



Figure 8 - Crisis communication: addressing hazard + outrage during Covid-19 pandemic. Adapted from: Malecki *et al* (2020)

Malecki *et al* (2020) conveyed that having multiple communication channels as observable in the figure 8 bellow - social media, news outlets, press briefings and personal communication - interlinked with the consistency of knowing which information should or not be transmitted to the public audience helps the authorities to gain trust and confidence, but also to be seen as a proactive agent in communicating mitigation measures while being empathetic with the population.

Moreover, Ophir (2018) explained that although news outlets are important to inform the population and also to shape the public's perception of risk, social media has gained more room in being the "driver" of information that the public audience comprehends and responds to. Nevertheless, Malecki *et al* (2020) claimed that social media can also be the first medium to provide the perfect environment to the creation of misinformation which then will spread rapidly throughout the population which somehow, in the duration of the pandemic, allows the public institutions in charge to regain trust/confidence from the population and keep in control of the situation. It has also been approached the number of case studies that describe how communication made by health experts and credible scientist helps in the public's response - adoption of the mitigation measure and therefore containment of the outbreak - has proven to be more successful than only political individuals or those who are not experts in the matter (Glik, 2007) which can also be perceived on the step "Expert Strategies" meaning that it is important to have experts - those being doctors or scientist - prepared to lead in case of crisis communication in a health crisis (Malecki *et al*, 2020). In addition, the step "Address Outrage - Know the audience" highlights the need to communicate with the population during the crisis situation, especially in health crisis as Covid-19 which can be beneficial to effectively reduce risk reduction, promote mitigation measures which consequently leads to the control of the pandemic.

Sandman (1987) and Slovic (1987) also approached this topic, corroborating with the need to communicate the steps to be taken in each situation with the public's audience so that there is a safer environment which will reduce anxiety and fear while promoting control. Still, Malecki *et al* (2020) add that a carefully planned strategy, where the public is accepted as a partner, conduct honestly, and being transparent and always evaluating and reassessing strategies will be the most useful tools to adopt in these situations.

Moving forward whilst still linking the next segment with the step "Address Hazard" more specifically acknowledging uncertainty and fear with honesty, clarity, empathy, and gratitude there is an essential factor to develop which also changed the course of the Portuguese strategy to fight Covid-19: Leadership. Although being crucial to prepare and plan a crisis communication strategy in order to control, as effectively as possible, the outbreak as previously mentioned not only on the qualitative research sub-chapter but also on theoretical framework. The leadership felt in Portugal changed the risk perception in the vaccination process. Yulk (1998) and Pillai & Meindl (1998) express that when facing a situation of uncertainty unconsciously there is a promotion of growth of a Leader - and this leader in Portugal was Henrique Gouveia e Melo, Vice Admiral and Coordinator of the Vaccination Task Force.

The first months of the Portuguese vaccination strategy were considered insecure and slow which resulted in a mistrust by the public opinion, especially due to the misfortune of alleged inappropriate vaccination at the beginning of the vaccination process which generated tension and a potential crisis within the occurrent health crisis. This situation led the General Inspection of Health Activities (IGAS) to start an inspection process on the implementation of the vaccination plan to verify compliance with the standards and guidelines applicable to the administration of vaccines. It was clear that the Portuguese perception towards vaccination had to be changed.

The Task Force for the Elaboration of the Vaccination Plan against Covid-19 in Portugal, commonly known as *Task Force,* was created by the Portuguese Government to ensure the coordination and articulation of the various government departments involved in the preparation and execution of the planning of the vaccination strategy against Sars-CoV-2, in its logistics, executive and communication aspects. After being nominated, Henrique Gouveia e Melo, Vice Admiral and Coordinator of the Task Force switched the process, built a new dynamic, and implemented a planning and monitoring structure at the strategic level. This new model resulted in an effective implementation action across the whole system making it more inclusive and collaborative to go along with a constructive, responsible, and open dialogue. "It´s unanimous that the leadership of Vice-Admiral Gouveia e Melo in the administrations of vaccines in Portugal, is in general, a success" (Brito, 2021). Moreover,

the strategy that the Vice-Admiral implemented shaped the vaccination campaign on three levels: organizational and logistical process, communication process and leadership process.

McClelland (1975) presented two types of charismatic leadership: Socialized or Personalized charismatic leadership. A socialized charismatic leadership can be defined as "(a) based on egalitarian behavior, (b) serves collective interests and is not driven by the self-interest of the leader and (c) develops and empowers others." (House & Howell, 1992. pp. 84) whereas personalized charismatic leadership is "(a) is based on personal dominance and authoritarian behavior, (b) serves the self-interest of the leader and is self-aggrandizing and (c) is exploitive of others" (House & Howell, 1992: 84) Nonetheless, it comes down to the follower's trust and disposition to be influenced by a charismatic leader (Kouzes and Posner, 1987) As such, there are three main qualities that potentially determine the follower's trust in the leader: Having a vision - being able to identify and articulate it; Being sensitive to the needs of his or her followers - that sets the example; Believes in fellowship – promotes group cooperation and the acceptance of group goals. (Podsakoff *et al*, 1990)

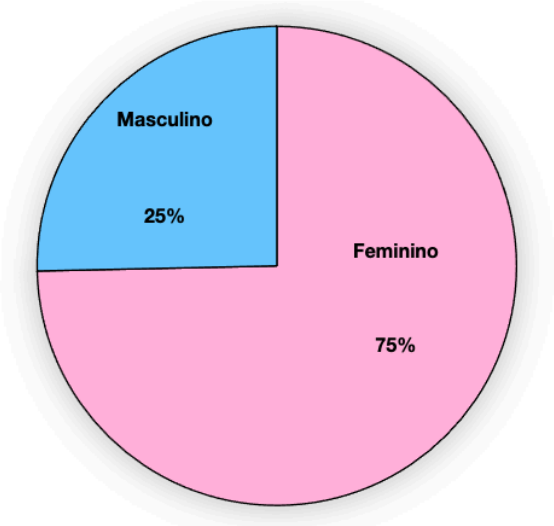
Vice-Admiral Henrique Gouveia e Melo is one example of charismatic leadership. He had vision and willing to take personal risks to accomplish that vision "(…) I have ideas and I develop them. (…) Yes, is it the pleasure of taking risk" (Gouveia e Melo, 2021). Moreover, Gouveia e Melo is sensitive to other's needs and his behaviour sets the example "I am merciful to one's that do good, that may fail but gave all of themselves" (Gouveia e Melo, 2021) but above all that he displays extraordinary behaviors, "In the Navy, for example, I always wanted to do the hardest things because I thought they were the most interesting. But I felt the fear in my colleagues, who did not take risks by fear of harming their career." (Gouveia e Melo, 2021). In addition, Henrique Gouveia e Melo was awarded the 32nd Personality of the Year Award - Martha de la Cal. The Association of the Foreign Press in Portugal (AIEP) intends to distinguish the person or institution that most contributed to promoting the image of Portugal abroad during the year. According to Guiliana Miranda, President of AIEP "The success of Portugal's vaccination strategy was news all over the world. Therefore, the choice of Vice Admiral Gouveia and Melo soon won the support of most professional"(Cision, 2021)

### 4.2 Quantitative Analysis

Concerning the quantitative analysis, as mentioned in the methodological approach, the data was retrieved from the online survey conducted in December 2022, resorting to the SPPS Statistics, a statistical software highly employed on social sciences analysis since it allows a more complex management of data - multivariate analysis and advanced analytics. The online survey results will be presented with graphic support as well as summaries that detail the questions and their outcomes.

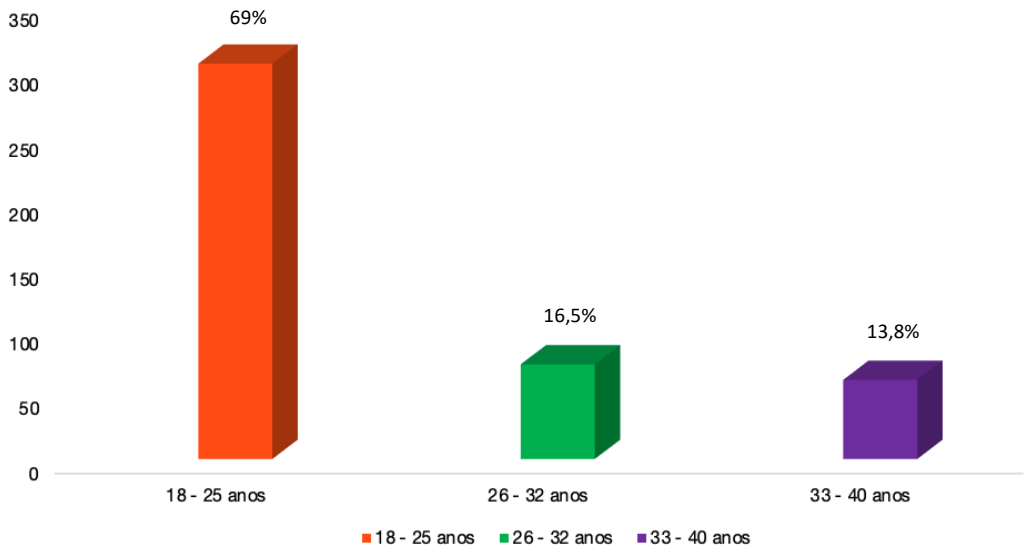
**Sample Characterization**

**Graphic 1 - What is your gender?**




Through the analysis of the graphic, it's possible to observe the sample distribution by gender. As so, the sample consists of 111 males and 327 females, that is, 25% and 75%, respectively. Since the only mandatory criteria to be considered as valid for this investigation was the date of birth - Generation Millennial and Z - the discrepancy perhaps might be attributed to the way it was disclosed, since the online survey was shared on the researcher's social media and by other people who volunteered to share the survey.

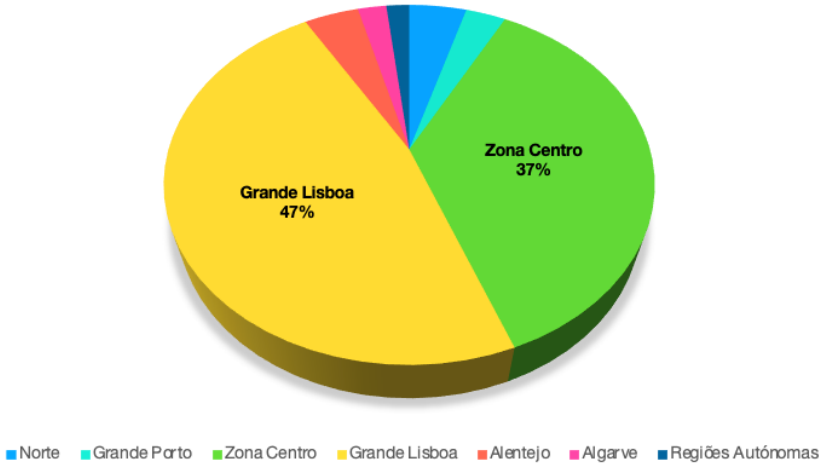
**Graphic 2 - What is your age?**




As detailed on the research question, as well as mentioned throughout the dissertation, the public perception of the Millennials and Zers generations were under analysis, and consequently, it was required that the individuals were in those age groups in order to be a part of the study and to have valid answers.

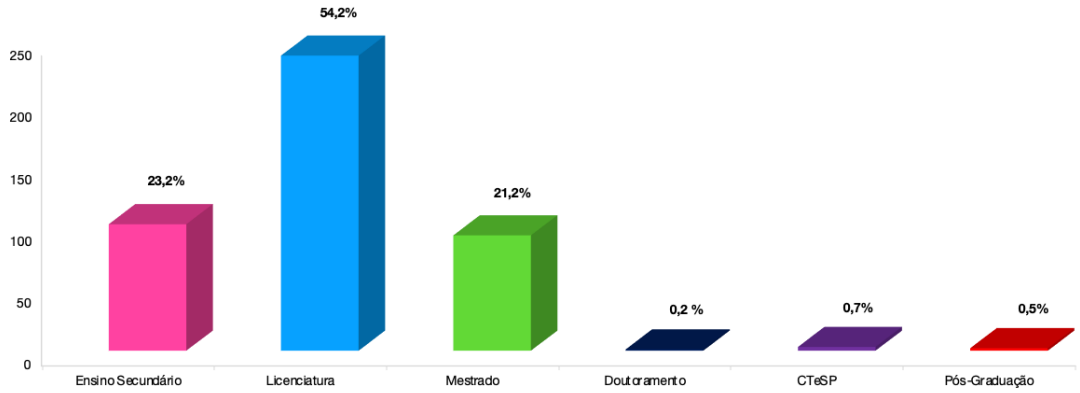
Therefore, this graphic represents the mandatory criteria for this research. As demonstrated above, the sample is mainly composed by *Gen Zers* - 18 to 25 age groups - collecting 305 answers which corresponds to 69% of the respondents. Furthermore, the 26 to 32 age groups - youngest Millennials - follows with 16,5% - 73 individuals - and lastly, the group with fewer answer correspond was the age group of 33 to 40 corresponding to 61 “first-borns” Millennials (13,8%).

**Graphic 3 - Where do you live?**



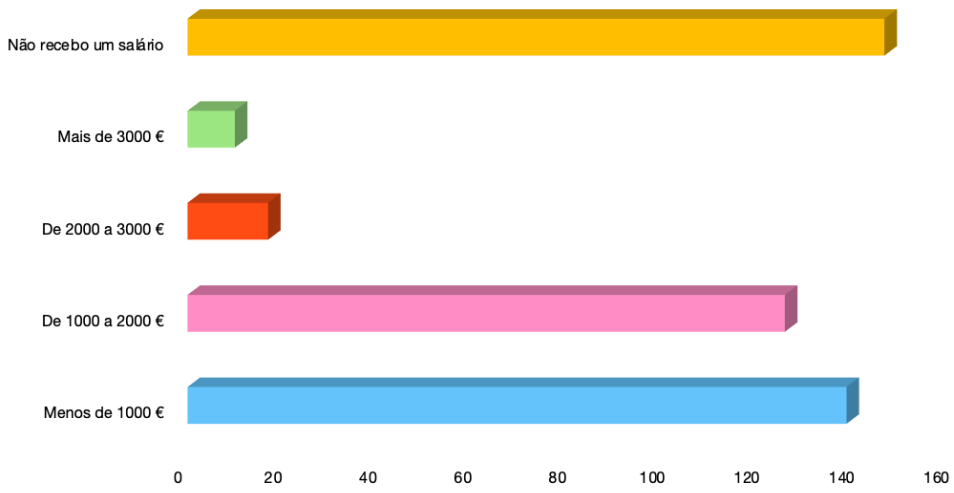

As observable on the graphic above detailing the geographical distribution of the respondents, *Grande Lisboa* had the majority of answers counting with 208 respondents, corresponding to 47% of the sample, followed by *Zona Centro* with 160 individuals matching up to 37% of the sample; These two main regions stood out with a total combined of 368 respondents. *Região Nor*te and *Alentejo* had respectively, 4,6% and 4,3% - 20 and 19 individuals. Furthermore, *Grande Porto*, *Algarve* and *Regiões Autónomas* - *Madeira* e *Açores* - had 3,2%, 2,3% and 1,8% respectively combining in a total of 32 individuals.

**Graphic 4 - What is your academic background?**



Regarding the academic background of the respondents, they were given several options to choose from: *Ensino Secundário* (High School), *Licenciatura* (Bachelor), *Mestrado* (Master's) and *Doutoramento* (Doctoral Program). According to the data collected, 23,2% corresponds to the lower academic background "*Ensino Secundário*" composed by 102 individuals. As academic levels tend to go higher, in this particular sample, numbers decrease - 54,2% of the sample (238 individuals) attended a Bachelor's course, 21,2% claim to have a Master's Degree, whereas *Doutoramento* only has 0,2% equivalent to 1 individual. Moreover, if the respondents felt like their academic background did not fit in the appointed categories, they were given the possibility of naming their options, which 5 individuals suggested: *CTeSP* (High Professional Technical Courses) and *Pós-Graduação* (Post-Gradutate) - with 0,7% and 0,5% respectively.

**Graphic 5 - What is your Gross Monthly income?**




Furthermore, the final question of the sample characterization approaches the gross monthly income of the respondents. As perceivable in the graphic above, there are three categories that appear to have larger percentages those being: Do not receive monthly income coded in yellow; under 1000 euros coded in light blue; and in-between 1000 to 2000 euros coded in pink.

The first category "*Não recebo um salário"* (yellow) represents 147 individuals which corresponds to 33,5% of the sample, followed by "*Menos de 1000 €"* (light blue) with 139 individuals or 31,7% and lastly, in-between 1000 to 2000 euros accumulated a total of 126 individuals or 28,7%. The final two categories are representative of higher gross

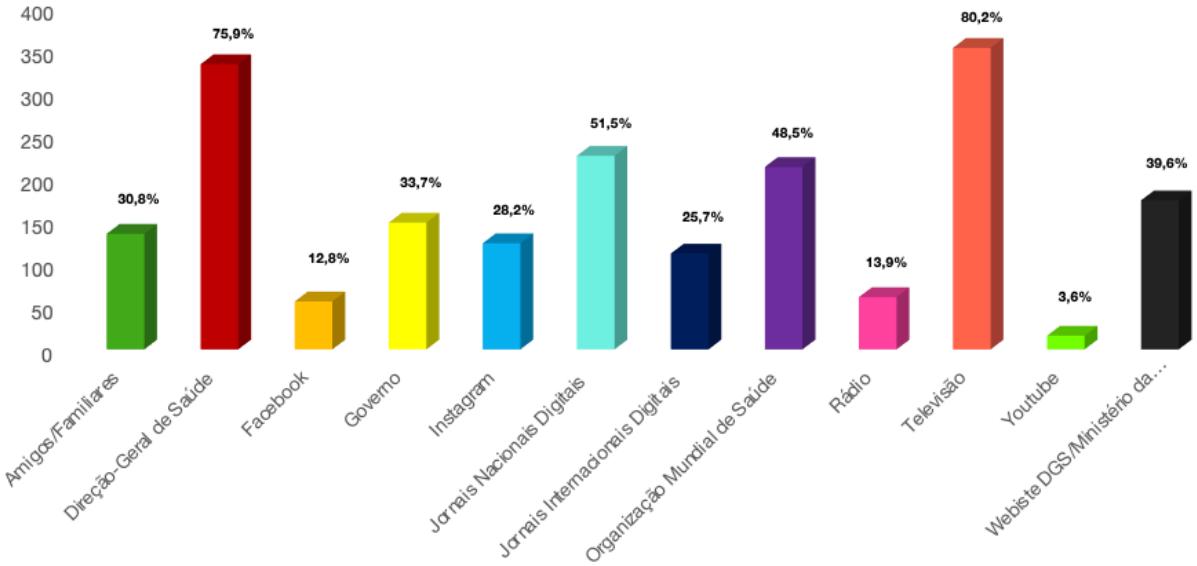
monthly income, starting off in 2000 to 3000 euros, coded in red, and over 3000 euros per month coded in green. Thus, 17 individuals - 3,9% - stated to receive in-between 2000 to 3000 euros whereas 10 individuals - 2,3% - have the highest level of income, over 3000 euros.

What do these elements indicate? It is understandable, based on the graphic above, that both Portuguese generations - Millennials and Gen Z - are more likely to receive a gross monthly income of under 1000 euros or in-between 1000 to 2000 euros per month, moreover, taking into consideration that the sample still has individuals in High School or starting their professional path. Therefore to have such a large piece in the category represented in yellow - Do not receive a monthly income is considered normal.

**Information Sources of Covid-19 Pandemic**

This section of the questionnaire aimed to understand where the respondent obtained information regarding Covid-19, on the evolution of Covid-19 in Portugal, characteristics of the virus, and/ or worldwide situation, and is composed by four multiple questions.

**Graphic 6 - At the beginning of the Covid-19 pandemic, what sources did you use to obtain information about the new virus?**



The first question, “At the beginning of the Covid-19 pandemic, what sources did you use to obtain information about the new virus?” portrays how Portuguese Millennials and Gen Z informed themselves about the new pandemic. As observable there were multiple sources to choose from: Family and Friends (coded in a darker shade of green), DGS (coded in red), Facebook (coded in orange), Government (coded in yellow), Instagram (coded in blue), National online newspapers (coded in light blue), International online newspapers (coded in dark blue), World Health Organization (coded in purple), Radio (coded in pink), Television (coded in salmon), YouTube (coded in light green), and lastly, DGS’s/Health Ministry Website (coded in black).

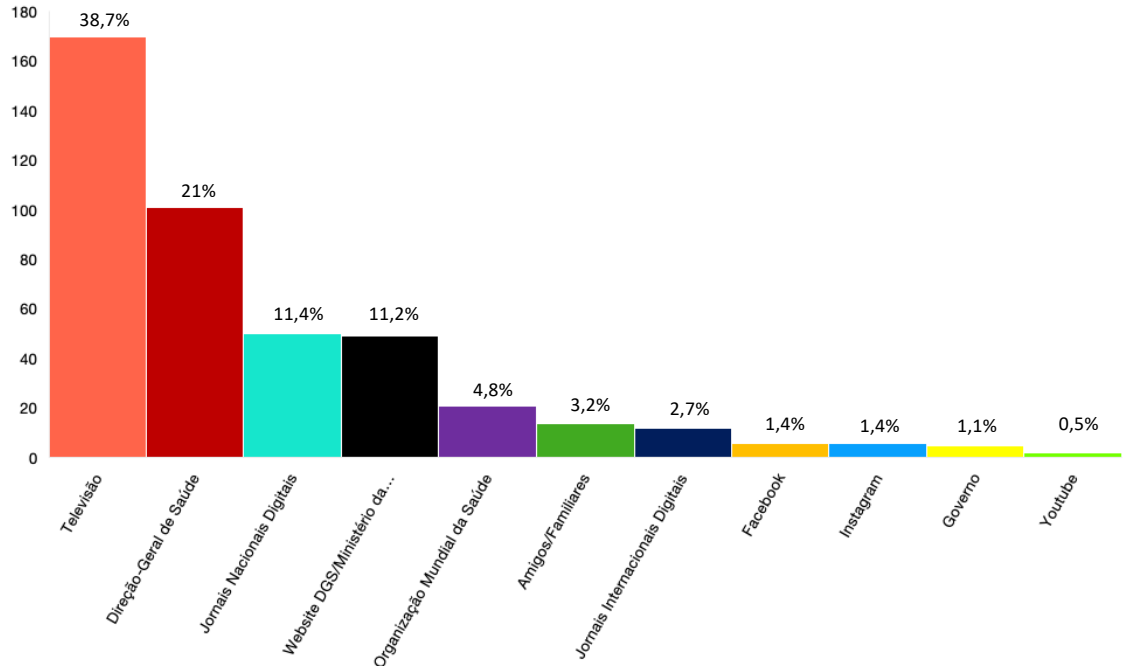
In a first glimpse, there are three information sources that immediately stand out: **Television**, which was indicated by 352 individuals, a total of 80,2%, followed by **DGS** with 333 responses - 75,9% - and finally, **National online newspapers** with 51,5% which equals 256 individuals. These numbers are consistent with the pandemic situation, since at the beginning of the outbreak, Portugal entered into a very restricted confinement which forced a consumption of information through traditional media, such as Television or digital media. One of the communication strategies followed by DGS was to hold daily conferences on the Portuguese epidemiological situation on television, which may also have contributed to a massification of both - Television and DGS - information sources, contradicting scholars that believed television to be “dead” as detailed on the qualitative analysis (Katz & Scannell, 2009). However, within the digital spectrum, social networks such as Facebook, Instagram, and YouTube lacked popularity resulting in 28,2% in Instagram, summing up to 124 individuals; 12,8% - 56 individuals - on Facebook; and 16 individuals - 3,6% - who claimed to choose YouTube as another source of information. Thus, contradicting the growth of Television, the traditional media - Radio - came short at 13,9%, being only considered as information source by 61 individuals. Although being confined, Family and friends culminated in a total of 30,8% - 135 individuals.

Looking at the numbers, and consequently, the percentage of individuals that reported to have followed specific health information sources, nationally the WHO had more

success gathering 213 responses (48,5%) whereas DGS/Health Ministry website reached 174 individuals (39,6%).

Moreover, note that some respondents left other information sources besides the ones provided by the researcher, however due to its low percentage it was omitted from graphical presentation: Google (0,2%), Saúde 24 (0,2%), Scientific articles/Academic Information (0,4%), Wikipedia (0,2%), Worldmeter website (0,2%) and one individual detailed that had no interest in knowing more about Covid-19.

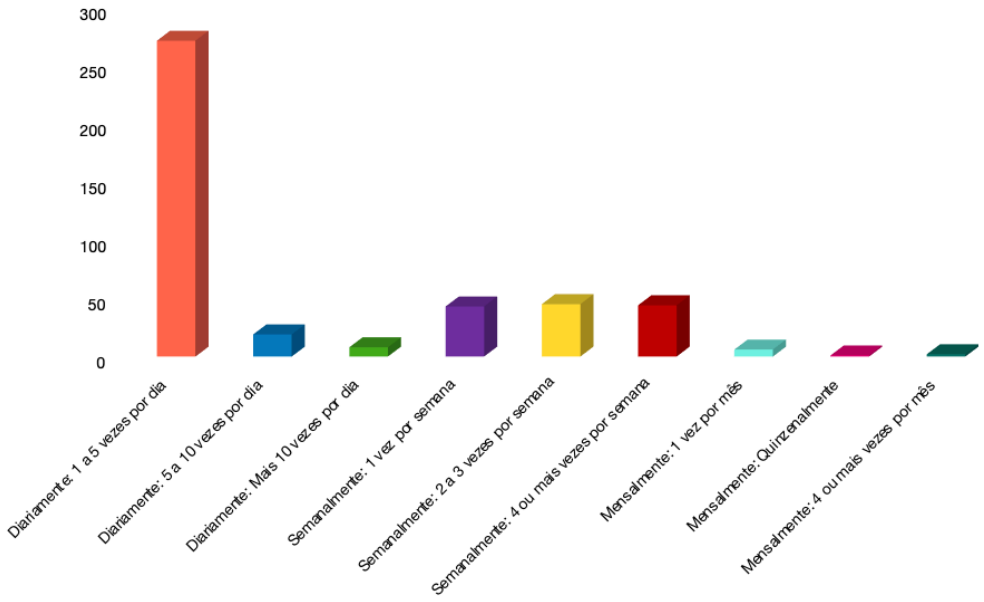
**Graphic 7 - From the sources indicated to obtain information about Covid-19, which source did you use more regularly?**




Regarding which information source the Millennials and Gen Z were keener to use, it is possible to conclude that Television and DGS have a more preponderant volume when compared to the others, which also aligns with the results obtained previously. Television was indicated by 170 individuals corresponding to 38,7% of this sample followed right after by DGS which obtained 101 responses (21%). Thus, online national newspaper and DGS/Health Ministry website have a similar numbers, counting with 50 individuals (11,4%) and 49 individuals (11,2%) whereas, in contrast, WHO (4,8%), Friends and Family (3,2%),

Online international newspapers (2,7%) and social networks - Facebook and Instagram - counted with 1,4% each and lastly, the Portuguese government and YouTube with 1,1% and 0,5% respectively.

**Graphic 8 - How often did you use these information sources?**



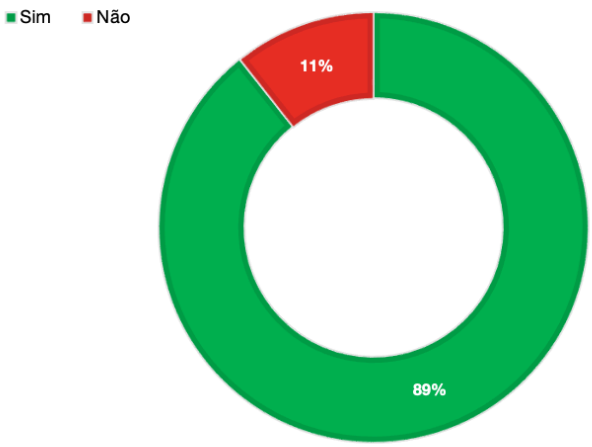

Concerning the usage of information sources to obtain more reliable and accurate information, the respondents had to detail **how often they researched for information** within three categories sub-divided into nine options: Daily: 1 to 5 times a day; 5 to 10 times a day; More than 10 times a day; Weekly**:** 1 time per week; 2 to 3 times per week; More than 4 times per week; Monthly**:** 1 time per month; In a fortnight; More than 4 times in a month.

As observable, the first sub-category "Daily: 1 to 5 times per day", coded in salmon-colored, gathered 271 answers corresponding to 61,7% of the sample, meaning that more than half of the sample used information sources daily, between 1 to 5 times per day. Moving onwards, coded in blue, "Daily: 5 to 10 times per day" secured 19 individuals equaling 4,3%, and coded in green "Daily: More than 10 times per day" was chosen by 8 individuals or 1,8% of the sample. Next in order, the Weekly category is highlighted by a more homogenous buildout. The option "Weekly: 1 time per week" gathered 43 responses which corresponds to 9,8% of the sample, "Weekly: 2 to 3 times per week" was indicated by 45

individuals which equals to 10,3% and at last “Weekly: More than 4 times per week” reached a total of 44 answers corresponding to 10% of the sample.

Furthermore, analyzing the monthly outcome, as perceived by the graphic individuals researched less during a larger period of time; concerning the first sub-category - represented graphically by the color turquoise - “Monthly: 1 time per month” 6 individuals claim to have researched for information about Covid-19 once a month, representing 1,4% of the sample. Succeeding, coded in pink “Monthly: In a fortnight” gathered the lowest total having only 1 individual which corresponds to 0,2%. Thus, “Monthly: More than 4 times in a month” also came short with 2 individuals representing 0,5% of the sample.

**Graphic 9 - While searching for more information regarding Covid-19 infection on social networks such as Twitter, Instagram and Facebook, did you detect false information?**




Concerning the last question of first thematic section, it had as main purpose to understand one of the topics approached during the literature review commonly known as fake news. Throughout the Covid-19 pandemic, information was being built and disseminated to dissimulate recipients and to create chaos within society, described by many scholars and the WHO as a “infodemic” or “global epidemic of disinformation” (Zaracostas, 2020). In this sense, when questioned about false information on digital platforms, 392

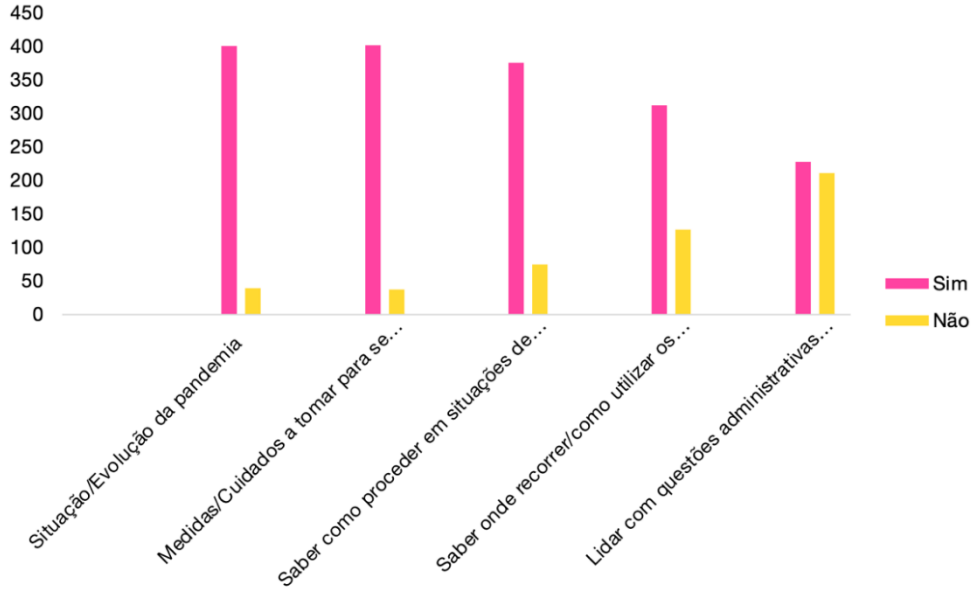
individuals - 89,3% of the sample - affirmed “yes”, that they have detected false information, contrasting with 11% or 47 individuals that answered “no”, they haven’t.

**Trust, Transparency and Effectiveness in the Communication Strategy of the Government and Health Authorities**

The third part of the questionnaire entitled “Trust, Transparency and Effectiveness in the Communication Strategy of the Government and Health Authorities” intended to analyze the perception of Millennials and Gen Z on the effectiveness of the communication strategy carried out by the Portuguese Government and the Health Authorities on how to control the Covid-19 pandemic in Portugal, during the first two years - 2020 and 2021. Therefore, to complete this section the respondents had to provide answers to open and close ended-questions and Likert-scale questions.

On the first questions it was required of the respondents to give their opinion and provide “Yes” - coded in pink - or “No” - coded in yellow - answers if the available sources of information were sufficient to keep them informed about/for the following elements: Situation/Evolution of the pandemic; Measures/Care to be taken to protect yourself (and others); Know how to proceed in contagious situations (your own and others); Know where to turn/how to use the available health services and lastly, Dealing with administrative issues (obtaining certificates, justifying absences).

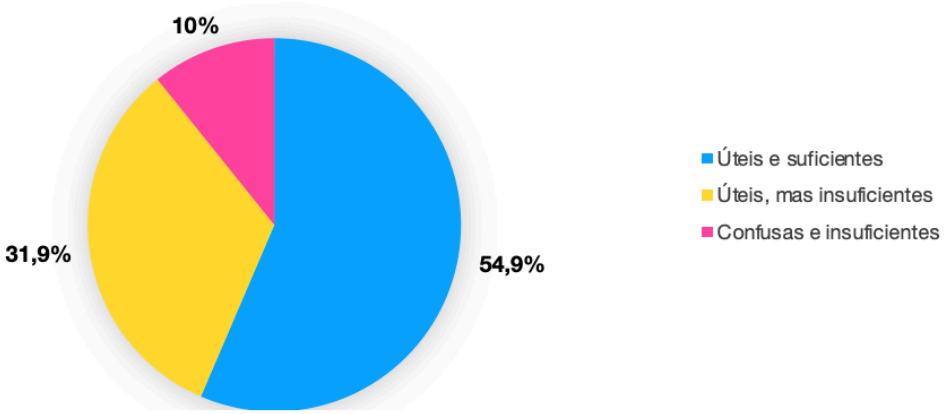
**Graphic 10 - Do you consider that the available sources of information were sufficient to keep informed about/for:**




The first element to be evaluated by the surveyed was the Situation/Evolution of the pandemic which overall was considered as well dealt, obtaining 400 "Yes" answers, corresponding to 91,10% of the sample, and therefore the remaining 8,90% - 39 individuals, claimed "No". Regarding the Measures/Care taken to protect yourself (and others) it reached the highest number of positive responses with 402 individuals affirming to be informed sufficiently on how to protect themselves and others, which corresponds to 91,60% of the sample, while 37 individuals - 8,40% - felt that the information wasn't enough. Moreover, when questioned about the how to proceed in contagious situations 375 individuals affirmed to have sufficient information - 83,10% - whereas 74 respondents said "No". The two remaining elements were more focused on health services and administrative services which altered the graphic dynamic being more pronounced on the last element; Where to turn/how to use the available health services obtained 312 positive answers - 71,10% of the sample - and 127 negative answers - 28,90% whereas dealing with administrative issues (obtaining certificates, justifying absences) gathered 228 answers of individuals that believe to have enough information - 51,90% - thus 211 reported otherwise - 48,10% - meaning that didn't feel as informed as needed.

Moving forward to the next question: "**Briefly describe (if applicable) other measures/data that the information sources have transmitted that are not referenced above**" aimed to gain a deeper knowledge on Millennial's and Gen Z opinion on the measures or data provided by the Government and DGS during the Covid-19 pandemic. Therefore, the outcome of this open-question was: 22 respondents gave their opinion, however only 15 answers were valid; within the valid responses the vaccination strategy, administrative measures to restrictive movements within each county, and the analysis and deconstruction of false news were the most mentioned information provided by the authorities for these individuals as observable on the following quotes: a) About vaccination, its evolution, processes, early stages of vaccination, but I don't complain too much because in the end, we were all learning", b) "Rules applicable at all times about restrictions and obligations for society and the use of administrative services.", c) "Understand better the characteristics of the virus", d) "Know where/how to use vaccination stations.

**Graphic 11 - When searching for more information regarding Covid-19 infection on platforms made available by the Government and DGS, the information available was:**



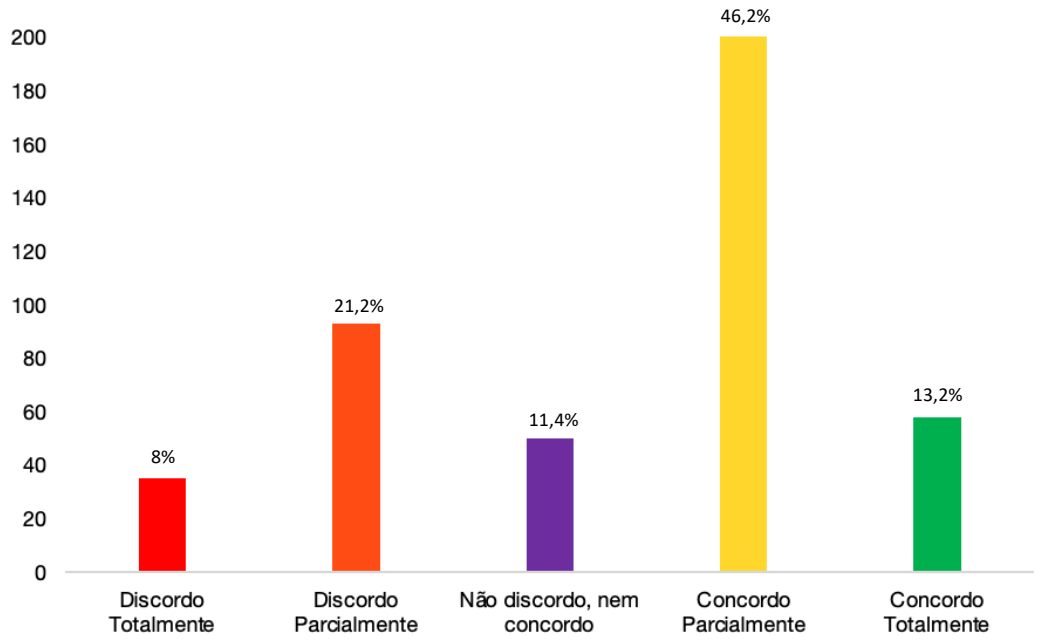

Concerning the overall information on Covid-19 made available by the Government and DGS, the respondents were able to choose between three options such as "Useful and enough" coded in blue, "Useful however insufficient" coded in yellow and lastly, "Confusing and insufficient" coded in pink. The respondents could also mention "other" answers if the provided options did not represent their belief. As so, 56% of the sample

claimed to have received “Useful and sufficient” information which corresponds to 241 individuals, while 140 individuals - 33% of the sample - felt that the information delivered by the Government and DGS was “Useful however insufficient”. Lastly, the remaining 11% of the sample - 44 individuals - claimed that the information was “confusing and insufficient”.

Thus, 14 individuals - 3,2% - provided their own answer on the “other” option, which resulted in the following reaction: 10 individuals affirmed that the information was “Useful and sufficient however confusing and of difficult access”, 3 individuals claimed to have “An amount of false information” and 1 individual affirmed “Never got information from the Government or DGS”.

**Graphic 12 - According to your opinion on the communication from the Government and the DGS, classify the following statements:**

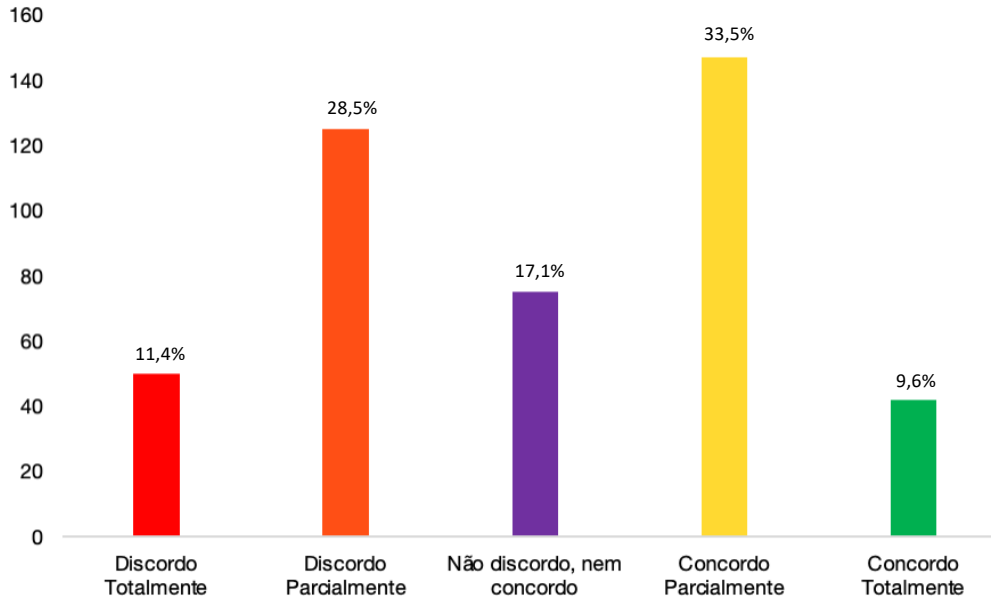
**Graphic 12.1** - The Government was effective in terms of communication during the Covid-19 pandemic.



Moving further, to Glasow (2015) there are three types of closed-ended questions which include Likert scale, the easiest questions for the respondent to give real answers but also easier for the researcher to analyze and make conclusions. Therefore, the participants for this survey had to classify the provided statements into 5 categories in Likert-scale, those being: "Totally Disagree" coded in red, "Partially Disagree" coded in orange, "Don't Disagree nor Agree" in purple, "Partially Agree" in yellow and "Totally Agree" in green.

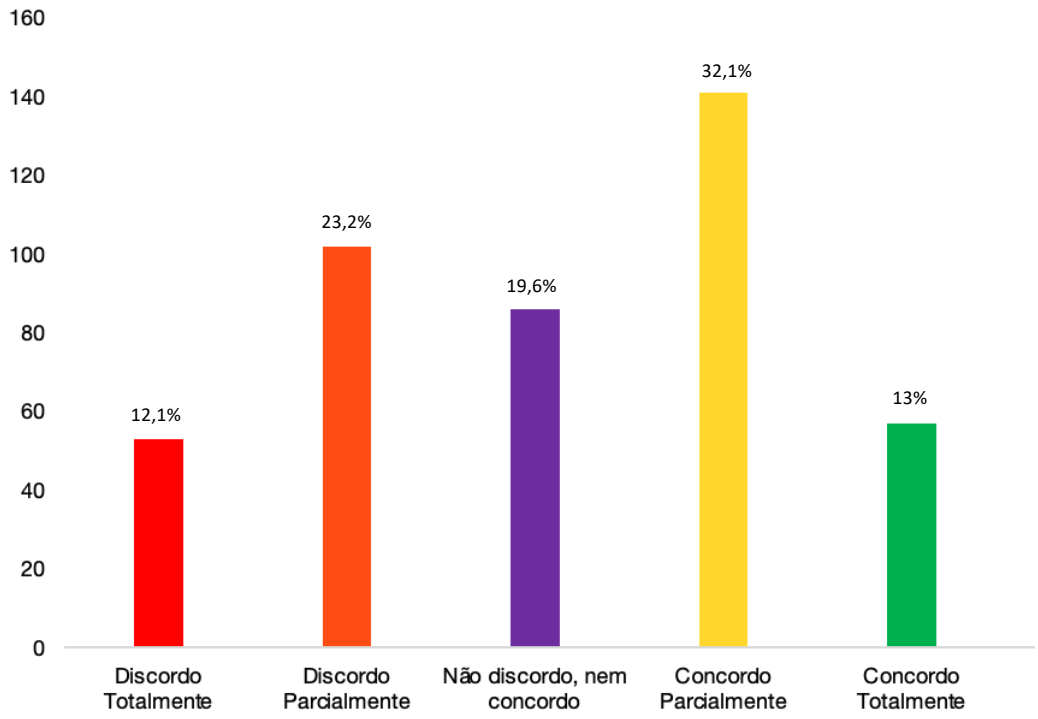
The graphic 12 represents the outcome for the affirmation: "The Government was effective in terms of communication during the Covid-19 pandemic" which in a first glimpse allows to comprehend that there are two distinctive categories with higher results: "Partially Agree" with 46,2% of the sample which corresponds to almost half of participants - 203 - and "Partially Disagree" which accumulated 93 responses meaning 21,2% of the sample.
Moreover, "Totally agree" came in third with 13,2% of the sample corresponding to 58 individuals while 50 participants or 11,4% detailed that they "Don't Disagree nor Agree" with the effectiveness of the Government communication. Lastly, "Totally Disagree" collected 35 responses, meaning 8% of the sample not sharing the same opinion as the rest of the participants.

**Graphic 12.2** - The Government communicated clearly and transparently during the Covid-19 pandemic.



Concerning the affirmation that "The Government communicated clearly and transparently during the Covid-19 pandemic" we observe a shift on the outcome specially on the yellow and orange columns, as well as a change in the red and green columns. Concerning the yellow column which represents "Partially Agree" it has decreased from the previous graphic to 33,5%, corresponding to 42 individuals, while "Partially Disagree" rose to 28,5% or 50 participants, which might indicate that even though the majority felt that the communication was effective it was not ssufficiently clear and transparent. This conclusion can also be supported by the difference in results on the red column "Totally Disagree" since it is now higher than before with 11,4% corresponding to 50 individuals while "Totally Agree" decreased to 9,6% - 42 individuals. Also, "Don't Disagree nor Agree" collected a higher number of responses, 75 which equals to 17,1% of the sample.

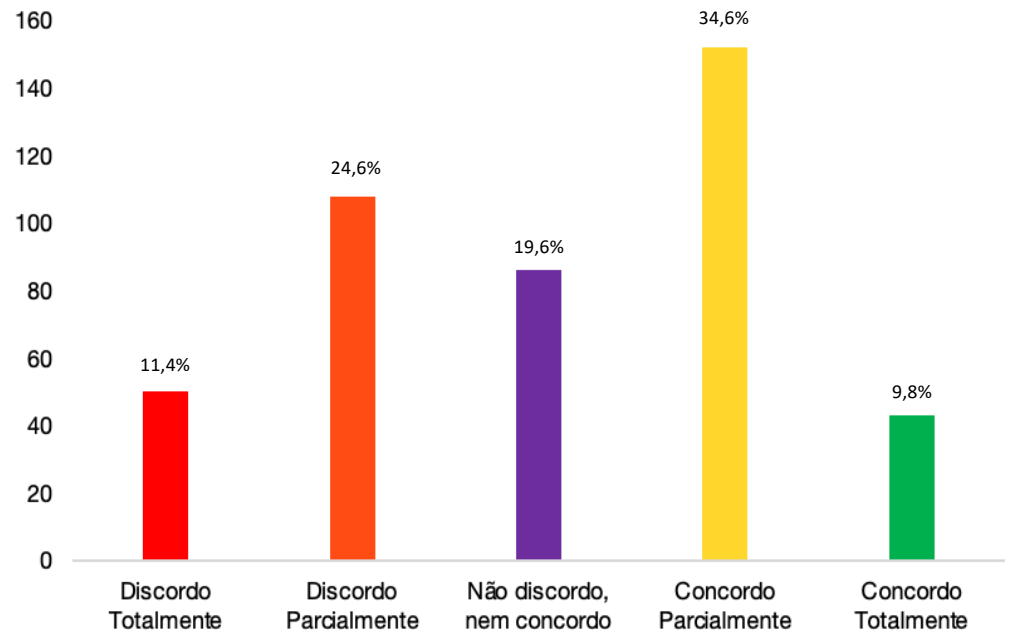
**Graphic 12.3 -** The Government was quick to implement measures to control the pandemic.




Moving on to "The Government was quick to implement measures to control the pandemic", we can verify that the red, green, and purple columns are gaining more room in the graphical distribution, the yellow column rising as well, while the orange is decreasing.

Starting by analyzing both opposite columns, the “Totally Disagree” and “Totally Agree”, the outcomes are similar, having 12,1% which corresponds to 53 individuals not agreeing on how quickly the government acted, contrasting with 13% of the sample or 57 participants that do believe that the implementation was timely. Furthermore, having a “Don’t disagree nor Agree” option allows the participants to demonstrate that although having an opinion it’s not 100% certain which indicates that on this specific statement 19,6% or 86 individuals didn’t have a strong belief on the timetable for the implementation of control measures. Moreover, “Partially Disagree” collected 102 answers which corresponds to 23,2% of the sample whereas 32,1% equals to 141 participants affirmed that they partially agreed with the provided statement.

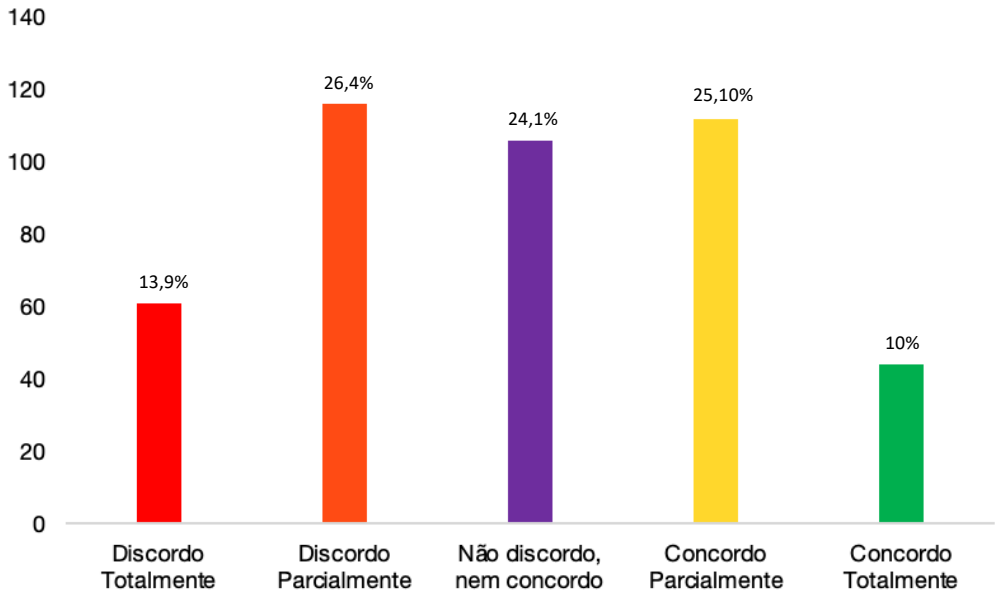
**Graphic 12.4 -** The transmission of information by the Government and DGS was carried out in a time.




On the same grounds as the previous graphic, the central point for this statement was to comprehend if the transmission of information by the Government and DGS was carried out in time, meaning, if the information regarding the pandemic was release at the right moment of the health crisis. Therefore, in both statements, the red and orange columns gathered similar results, having 11,4% of the sample which corresponds to 50 individuals,

that “Totally Disagree” with this statement whereas 108 individuals or 24,6% of the sample “Partially Disagree”. On the other hand, 34,6% of the sample - 152 participants - claimed to “Partially Agree” that the information was release on time while only 9,6% which corresponds to 43 individuals “Totally agree”. The remaining 86 participants and therefore, 19,6% of the sample did not have a formulated opinion and chose “Don’t Disagree nor Agree” which when compared to the previous statement, gathered the same result.

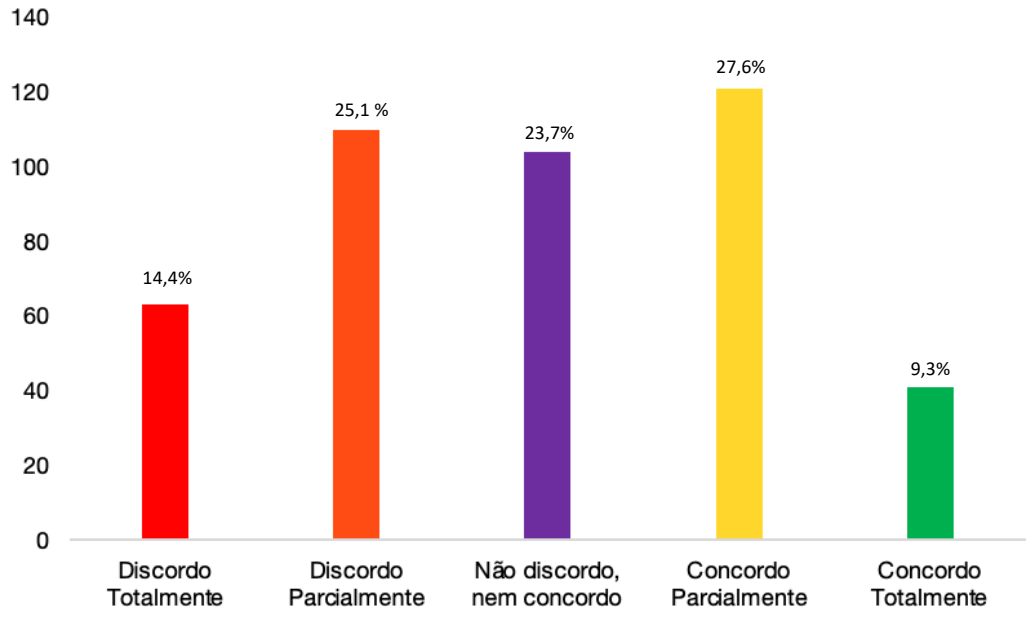
**Graphic 12.5 -** DGS press conferences conveyed confidence about how public authorities were managing the Covid-19 pandemic.




Regarding the press conferences held by DGS on social platforms, mainly Facebook - as described on the Qualitative data analysis - did it convey confidence to the public on how the authorities were managing the Covid-19 pandemic? It is possible to observe that the graphical distribution has significantly changed. Those changes are the following: red and orange columns have reached the highest values, having 61 responses which corresponds to 13,9% of the sample claiming to “Totally Disagree”, whereas 116 individuals or 26,4% of the sample “Partially Disagree” with the statement. Furthermore, although having a high percentage, the yellow column which represents “Partially Agree” gathered 25,10% which

corresponds to 112 participants. It is also visible that the percentage of "Don't Disagree nor Agree" reached its peak with 106 participants which corresponds to 24,1% of the sample, meaning that these individuals don't have an opinion formulated regarding this matter. Lastly, with the lowest percentage, only 43 individuals "Totally agree" with the provided statement, which indicates that 40,3% of the participants did not agree that the DGS conveyed confidence on how to control the pandemic situation, which contrasts with 35,1% that assumed the trust transmitted by the DGS's press conferences.

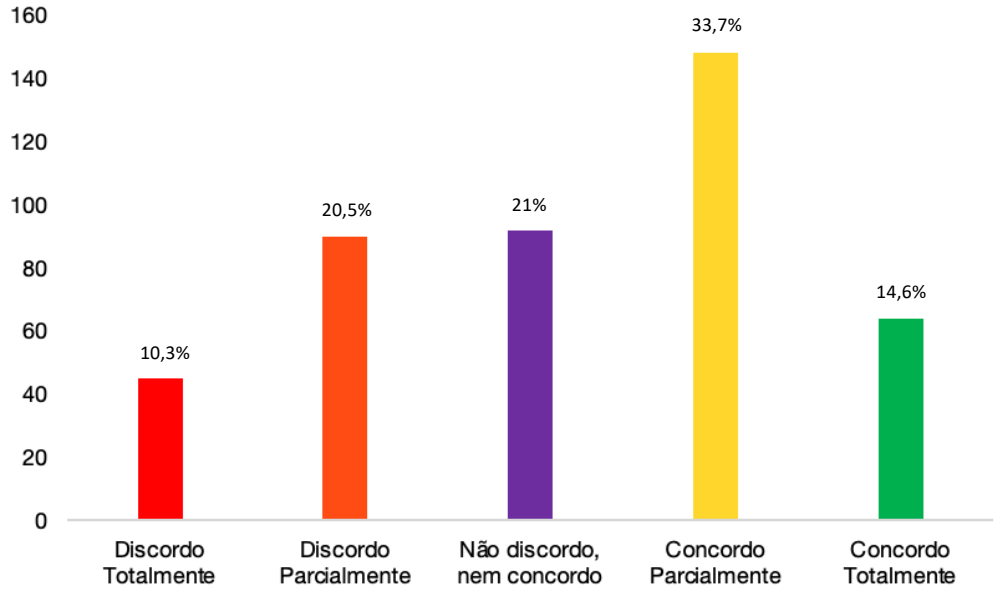
**Graphic 12.6** - During the Covid-19 pandemic, the Government and DGS always used the truth when addressing the population.




In addition, it was relevant to understand the perception of both generations - Millennial and Gen Z - on the truthfulness of the Government and DGS during the pandemic, since it can be intertwined with the confidence that individuals attribute to constitutional and health authorities but also to follow the rules. As for the outcomes, 63 individuals, which corresponds to 14,4% of the sample, "Totally Disagree" whereas 110 participants or 25,1% of the sample "Partially Disagree". Moreover, on the opposite side, 27,6% of the sample, which corresponds to 121 individuals "Partially Agree" whereas 9,3% of the sample - 41

individuals - do “Totally Agree”. Thus, 104 participants - 23,7% - do not have a clear answer to give. This result indicates that 39,5% of the Generation Millennial and Gen Z did not feel that the Government and DGS would always use the truth when addressing to the population during the Covid-19 pandemic while 36,9% believe that the Portuguese authorities always chose the truth when addressing the population.

**Graphic 12.7 -** The Government and DGS were clear and effective in transmitting the necessary measures to combat the Covid-19 pandemic.




In order to move forward to the next section, the respondents had one last Likert-scale question entitled: The Government and DGS were clear and effective in transmitting the necessary measures to combat the Covid-19 pandemic. This statement had as main objective to understand how clear and effective the Portuguese authorities were on transmitting all the measures that should be followed by the population. In this sense, it is clear that the majority of the individuals chose “Partially Agree” with 33,7% of the sample which is equivalent to 148 individuals, while other 64 individuals which corresponds to 14,6% chose “Totally Agree”. Moreover, the option “Don’t Disagree nor Agree” gathered 21% of the sample - 91 individuals - meaning that those participants did not know or did not

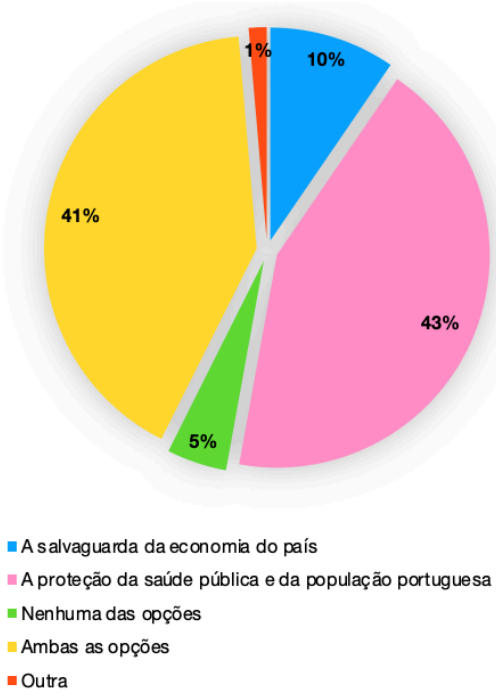
have a formulated opinion regarding this statement. Concerning the red and orange columns, it is possible to observe that 20,5% of the sample which is equivalent to 90 participants "Partially Disagree" while 10,3% corresponding to 45 individuals claimed, "Totally Disagree". As so, regarding the clearness and effectiveness in transmitting the necessary measures to combat Covid-19 pandemic, the sample in analysis provided a positive outcome, 48,3% believe that the Government and DGS were indeed effective and clear whereas 30,7% do not agree on how the Portuguese authorities communicated.

To complement the Likert-scale question, the respondents could provide answers to an open-ended question - illustrated on the appendix 1 - in case of having a deeper opinion regarding the communication of the Portuguese authorities that would like to share. In this sense, a total of 19 answers were collected, however only 13 are valid due to dubious replies.

In-between the valid responses, several individuals mentioned interesting opinions which can enrich the analysis, as for example: *Saúde 24* - Health line - collapsing and the tardiness of the Government to act; Lack of synergy between the Government and DGS. Moreover, three participants detailed on how the Portuguese communication throughout the Covid-19 pandemic opened doors for fear which created "*a collective panic"* (Participant A). It has been classified as "*an exaggerated and unrealistic way due to the lack of comparative statistics specially on the number of deaths from/of Covid-19 and other causes"* referred the participant B which was corroborated by the participant C on *"the constant mixture of concepts between coronavirus (Sars-Cov2) and Covid-19 (disease caused by Sars-Cov2 infection) and the volume of deaths in the pandemic statistics that tested positive for the presence of coronavirus, even if they did not present any symptom of Covid-19 at the time of death."* Adding, the participant D provided an extensive and detailed opinion on how aggressive the communication was leading the population to take less advisable practices, also, he/she also referred the vaccination strategy: "*I also think they were too incisive with vaccination, since they made vaccination mandatory, in an indirect way (since many people could not go to certain places for lack of vaccine) - I agree with the vaccination, but I think that the way they conveyed the importance of vaccination was not the most correct, and they failed on other issues as or more important: for example, I have never seen/heard hygiene measures specially the good use of EPIS (from masks on the mirrors of cars to wearing completely worn-out masks, but also gloves in supermarkets which proved ineffective)"*.

Still, there were some complements to the communication made by the Government and DGS: "*I think that the fact that we live in such unexpected and unprepared times, I believe that Portugal was one of the countries that best dealt with the pandemic. I think the government and the DGS have always had an exemplary attitude in terms of communication. Not alarming, but not hiding reality."* affirmed participant E, and "*the Government has been supported by recommendations of the health experts however there is the need to understand that "in the beginning these decisions may have been difficult due to lack of information. In perspective we know that some measures should have been different"* mentioned by the participant F.

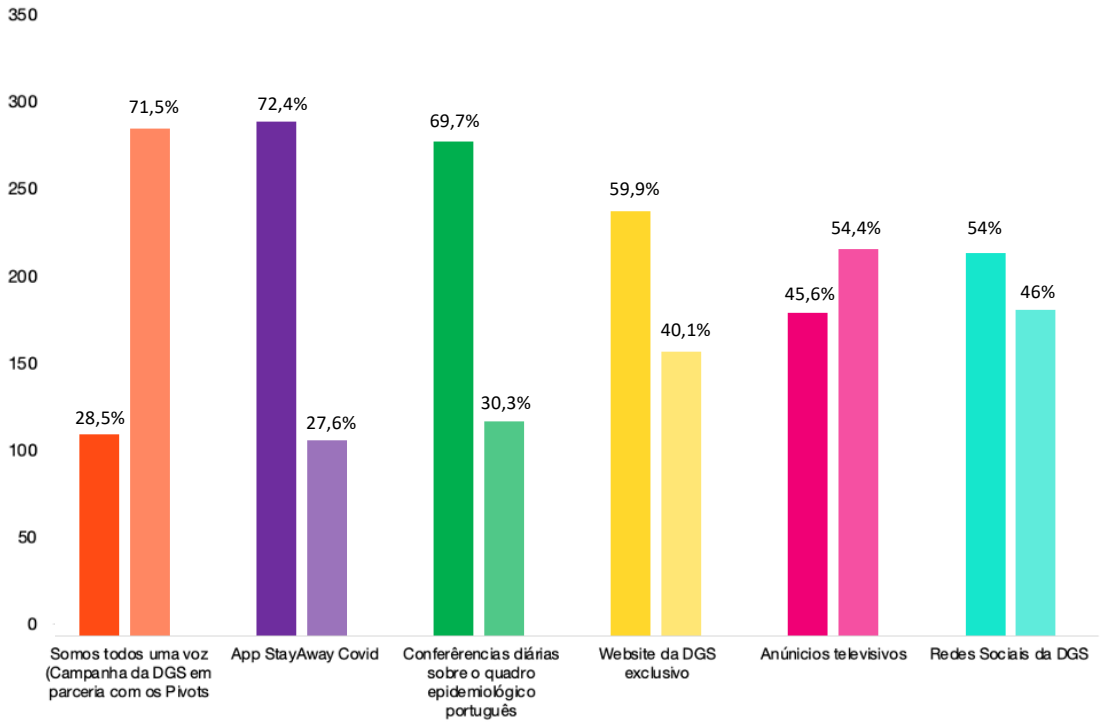
**Graphic 13 - In your opinion, what is the priority of the Government and DGS during the Covid-19 pandemic?**




After attempting to understand Generation Millennials and Gen Z's perception on the Portuguese Government and DGS communication through several questions throughout the section 4, this question aimed to understand what their view was on the priority of the Government and DGS. Therefore, the respondents had 5 options to choose from: "Safety of the country's economy"; "The protection of public health and the Portuguese population"; "None of the options"; "Both options" - combines the economy safety and the protection of

public health and Portuguese population; "Other". According to the results obtained and represented above on the pie chart two options stand-out, those being: "The protection of public health and the Portuguese population" - coded in pink - with 43,3% which corresponds to 190 individuals and "Both options" - coded in yellow - with 41,2% which is equivalent to 181 individuals. Following with 9,6% of the sample which corresponds to 42 individuals is the option "Safety of the country's economy" whereas "None of the options" and "Other" gathered 4,6% - 20 individuals - and 1,4% - 6 individuals - respectively.

**Graphic 14 - Which of the following communication strategies implemented by the Government and DGS, do you know/see?**




Section 4 could not have ended without a cross-examination on the awareness of the communication strategies implemented by the Government and DGS. Therefore, this graphical distribution accumulates several implemented strategies such as: "*Somos todos uma voz*" a television campaign promoted by DGS in partnership with four Portuguese generalist television channels coded in orange; StayAway Covid app coded in purple; Daily press conferences on the actual epidemiologic Portuguese situation coded in green; DGS exclusive website coded in yellow; Television commercials coded in pink and lastly, DGS

social networks coded in blue. Moreover, in each column there is side column with a fainter color that corresponds to the omissive results which, in this case, are useful and interesting to analyze, to show who indeed knew each strategy. Although being represented on the same graphic, each color represents 100% of the sample - darker color and fainter color - since they are independent strategies.

The first strategy to be scrutinized is "*Somos todos uma voz*" - previously detailed on the qualitative analysis – was the one which gathered the most omissive results, more than half of the sample - 71,5% - about 314 individuals did not know this communication strategy while only 28,5% of the sample equivalent to 125 individuals knew about it. Taking into consideration that television was the most indicated information source on Section 2, why did 314 individuals not realize the existence of the campaign on the four national television channels? Was it badly communicated? What failed? Taking advantage on being approaching television, the communication strategy coded in pink "Television commercials" followed the same path as the as "*Somos todos uma voz*" campaign having more omissive results - 54,4% which is equivalent to 239 individuals - rather than viewers, who collected 200 answers.

Following, the "StayAway Covid app" - coded in purple - had a response rate of 72,4% of the sample which indicates that 308 individuals knew about the Covid-19 app whereas 121 were not aware of this communication/health strategy which corresponds to 27,6% of the sample. This particular strategy is the most known of all appointed communication strategies, so it was successful in communicational terms. Another well know strategy was the "press conferences held daily by DGS" - coded in green - and broadcasted on Facebook which were then also transmitted on the different television channels during the main newscast, which accumulated 69,7% of the sample which corresponds to 306 individuals being aware, while the remaining 133 individuals or 30,3% were not aware. Furthermore, regarding the "DGS's exclusive website" - coded in yellow - created only for this purpose as explained previously, gathered 59,9% of answers which represents 263 individuals knowing the existence of the website whereas 176 individuals - 40,1% - were not aware.

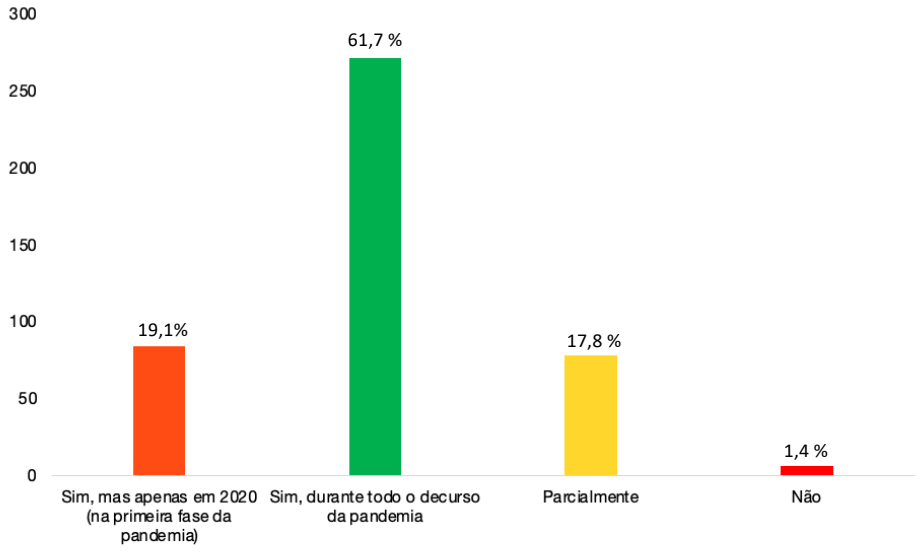
Lastly, regarding the "DGS's social platforms" - Facebook, Instagram, Twitter and Youtube - 54% of the sample which corresponds to 327 individuals knew about the social networks

while the remaining 46% which is equivalent to 202 individuals were not aware of the existence of these platforms.

**Adherence to Covid-19 Mitigation Measures**

After analyzing relevant topics for this research on an online survey, in order to understand Millennials and Gen Z's perception on how effective the communication strategy of the Portuguese authorities was, it was also necessary to perceive if communication had a direct impact on the adherence to the Covid-19 mitigation measures. Therefore, section 5 includes mostly Likert-scale questions, open-ended, and close-ended questions, aggregating 7 questions.

**Graphic 15 - Considering the communication strategy implemented throughout 2020 and 2021 by the Government and DGS did you felt somehow influenced to comply with the Covid-19 mitigation measures?**

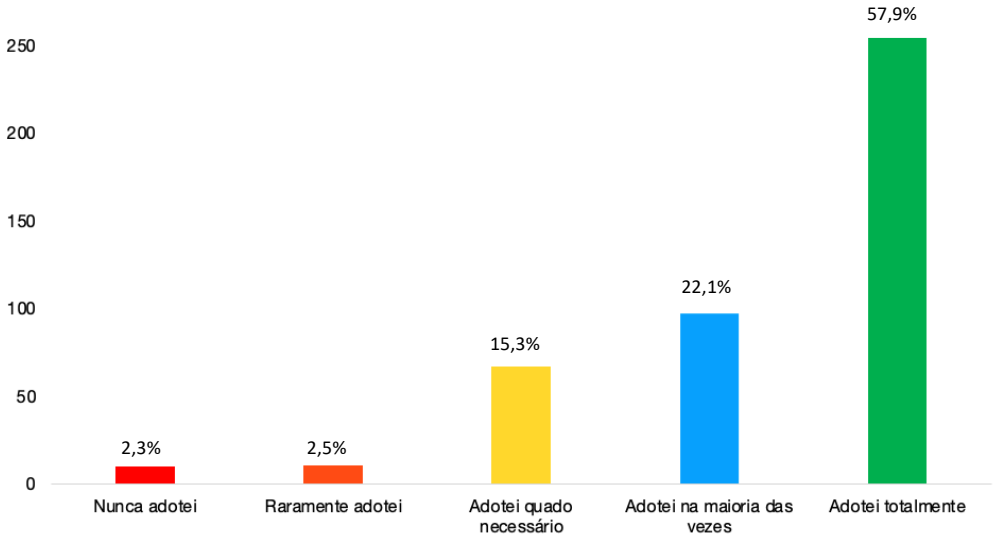



The first question of this section aimed to recognize if both generations felt somehow influenced to follow the mitigation measures applied by the Portuguese authorities - Government and DGS. The outcomes are graphically represented by colored columns and distributed into 4 categories, those being: "Yes, but only in 2020 (1st phase of the pandemic)" coded in orange, "Yes, during 2020 and 2021" coded in green, "Partially" coded in yellow

and “No” coded in red. Therefore, as observable the overall sample 61,7% which corresponds to 271 individuals felt influenced to comply with Covid-19 mitigation measures while 19,1% of the sample which is equivalent to 84 individuals only felt the need to follow the mitigation measures on the first year of the pandemic - 2020. Moreover, 17,8% which corresponds to 78 participants have followed “Partially” the mitigation measure while 1,4% which is equivalent to 6 individuals did not feel complied to take safety measures against Covid-19.

**Taking into consideration the measures implemented by the Government and DGS, which did you adopt in your daily life during the course of the Covid-19 pandemic?**

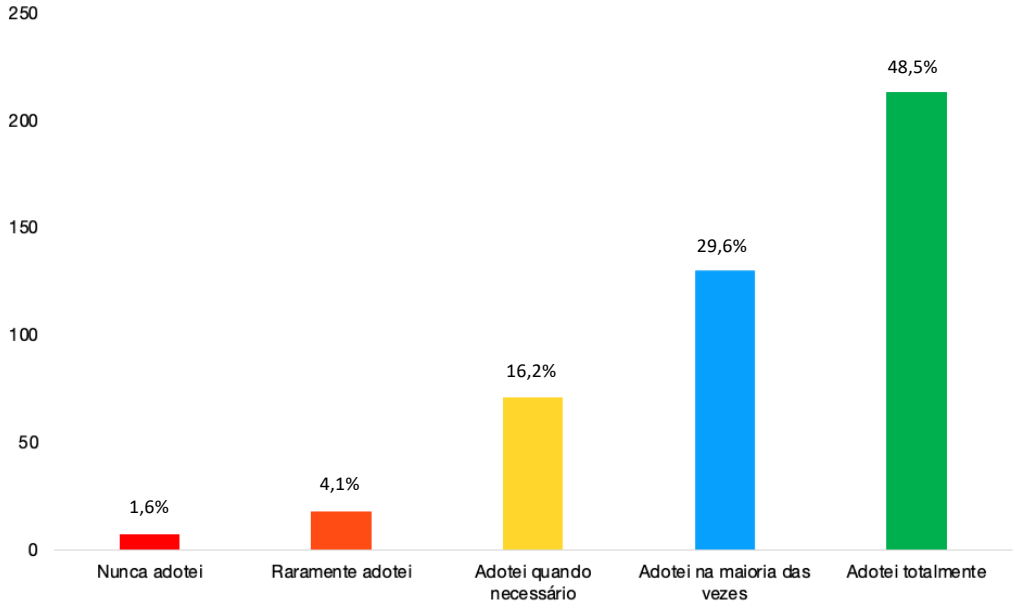
**Graphic 16.1 -** Compulsory confinement.




The next group of questions is under Likert-scale dynamics having 5 options to choose from: “Never followed/adopted” coded in red, “Rarely followed/adopted” coded in orange, “Followed/adopted only when necessary” coded in yellow, “Followed most of the time” coded in blue and lastly, coded in green “Always followed/adopted” in order to evaluate if both generations have taken into actions the measures implemented by the Government and DGS on their daily basis. In this sense, “Compulsory confinement” has gathered an overall positive outcome having half of the sample - 57,9% - which is equivalent to 254 individuals that have “Always followed/adopted” the compulsory confinement. Moreover, 22,1% of the sample which corresponds to 97 participants have affirmed to have

"Followed/adopted most of the time" while 15,3% which is equivalent to 67 individuals claimed to "Followed/adopted only when necessary". Adding, 2,3% and 2,5% corresponds to 10 and 11 individuals respectively that have "Never followed/adopted" or "Rarely followed/adopted".

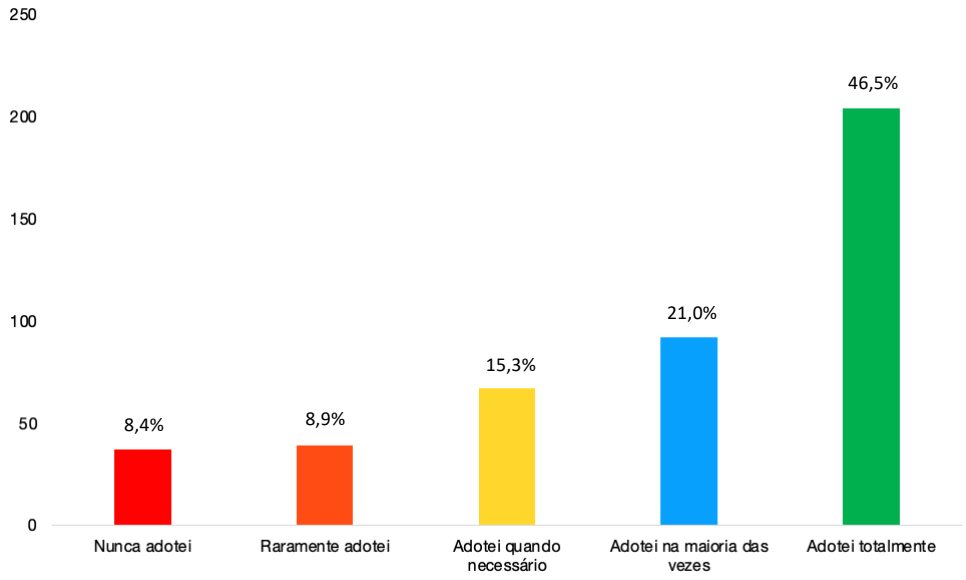
**Graphic 16.2 -** Strictly necessary home-exits.




Another measure implemented by the Government were strictly necessary home-exits which included to leaving home for work that could not be done in home-office, urgent health situations, or essential goods purchase on supermarkets.

Therefore, as observable in the graphic distribution and in comparison with the previous graphic on compulsory confinement, there is a decrease on having "Always followed/adopted" the mitigation measures to 48,5% which corresponds to 213 individuals, while "Followed/adopted most of the time" coded in blue and "Followed/adopted only when necessary" coded in yellow have rose up, gathering 29,6% of the sample which is equivalent to 130 individuals and 16,2% which corresponds to 71 participants respectively. Adding, "Rarely followed/adopted" also suffered an increase to 4,1% of the sample or 18 individuals while "Never followed/adopted" decreased to 1,6% which corresponds to 7 individuals.

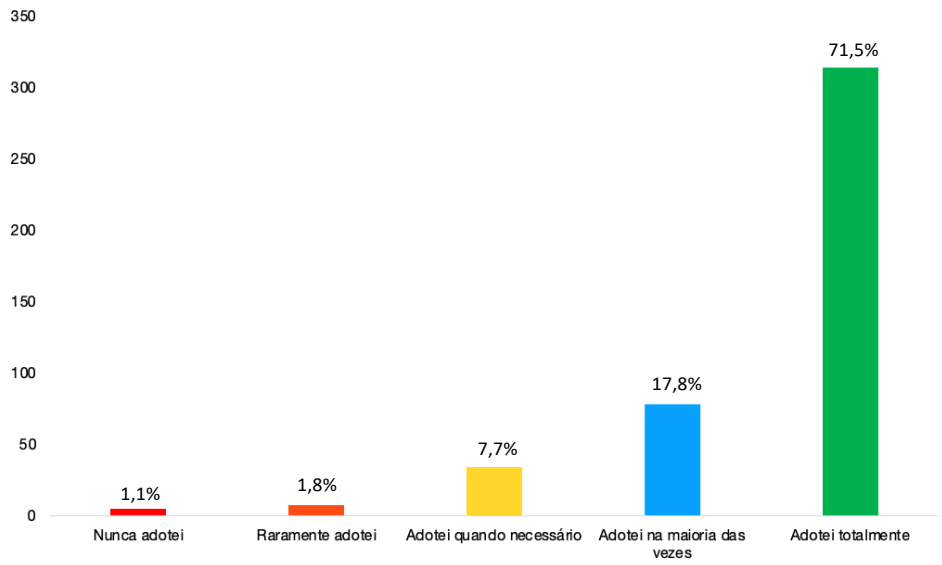
**Graphic 16.3 -** Hygienic walks (pet walking or exercise).




Besides being under a compulsory confinement, the Government gave permission to have "*Passeios Higiénicos*" which translate to being able to walk domestic animals such as dogs or others but also to pursue physical exercise outside during a certain period of time.

Following the same dynamic as the previous graphics, the respondents had to indicate if the measures were adopted on a daily basis. Therefore, this measure can be seen as a positive situation for those who wanted to walk their domestic animals or walk freely during a short period of time to exercise or just take leverage to be outside. Coded in red "Never followed/adopted" gathered 8,4% of the sample which corresponds to 37 individuals that preferred to stay inside. Moreover, 8,9% of the sample or 39 individuals described to have "Rarely followed/adopted" the hygienic walks whereas 15,3% which is equivalent to 67 individuals that "Followed/adopted only when necessary". Lastly, 21% of the sample affirmed to have "Followed/adopted most of the times" which corresponds to 92 individuals thus the remaining 46,5% is equivalent to 204 participants.

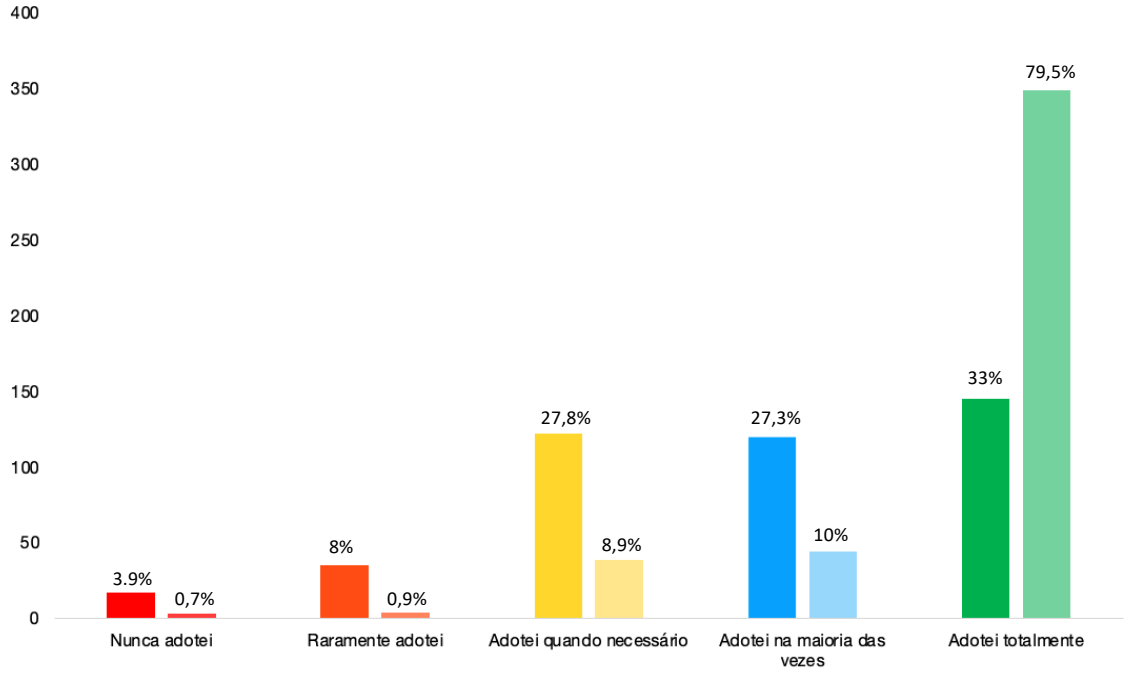
**Graphic 16.4 -** Individual hygiene measures (washing hands regularly, sneezing to the elbow, alcohol gel for regular disinfection).




Focusing more on individual hygiene measures such as washing hands frequently, sneezing to the elbow, alcohol gel for regular disinfections, measures that were on several informational publications on DGS's social platforms as Instagram and Facebook illustrated on appendix 2, we can observe that the graphical distribution is rather simple and indicates that the majority of the participants had indeed individual protection against Covid-19.

Analyzing with more detail, starting with the most elected column "Always followed/adopted" gathered more than half of the sample, 71,5% which corresponds to 314 individuals that have followed these, or other, individual hygiene measures.
Moreover, 17,8% of the sample, which is equivalent to 78 individuals, affirmed that they have "Followed/adopted most of the time" while 7,7% which corresponds to 34 participants detailed that only followed/adopted the measures "(...) when necessary". Although having low percentages, there were 13 participants that did not follow/adopted individual measures to protect themselves and others as well, as understandable by 1,1% of the sample which means that 5 individuals have "Never followed/adopted" or in this case, adopted individual measures and 1,8% or 8 individuals "Rarely followed/adopted".

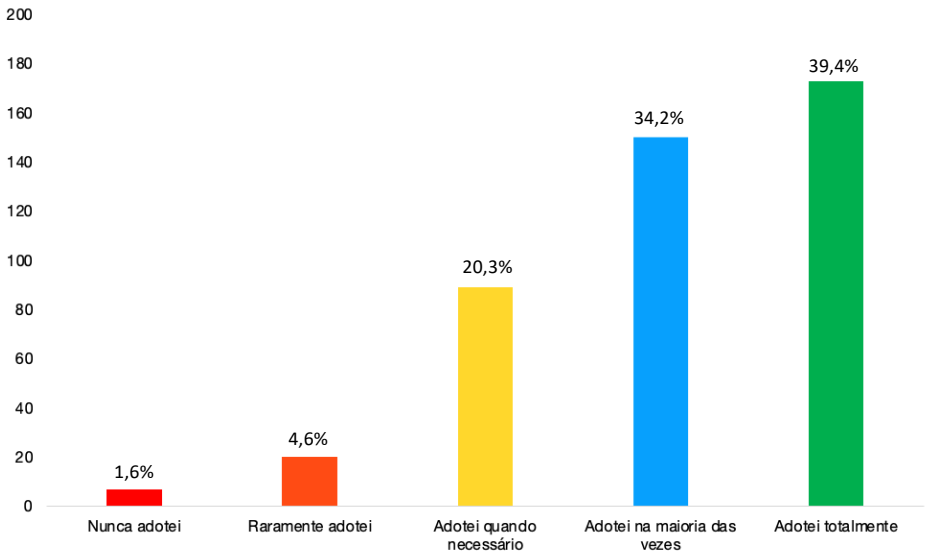
**Graphic 16.5 -** Use of mask in open spaces & Use of mask in closed spaces.




In this particular graphic, the dynamic changes due to having two distinct however similar Covid-19 mitigation measures, represented simultaneously by the same color with different levels of transparency. Taking into consideration that the mitigation measure under study are the use of masks in open spaces or closed spaces it was interesting to analyze them side by side. Therefore, the columns more to the left - vibrant color - indicate the percentage of the "Use of mask in open spaces" whereas the columns more to the right - faded color - are the indictive for the "Use of mask in closed spaces". To begin the analysis it is observable that into the category "Never followed/adopted" the vibrant red - open spaces - gathered 3,9% of the sample which corresponds to 17 individuals that did not use mask in open spaces contrasting with the percentage of closed spaces - 0,7% - corresponding to 3 individuals that "Never followed/adopted" the use of mask on closed spaces. Moreover, 8% of the sample has indicated that "Rarely followed/adopted" the use of mask in open spaces which corresponds to 35 individuals whereas 0.9% of the sample has also affirmed that "Rarely followed/adopted" the use of mask in closed spaces which translates into 4 individuals.
Adding, the category "Followed/adopted when necessary" has had a slight increase gathering 122 individuals which is equivalent to 27,8% of the sample adopting the use of mask in open spaces when necessary while 8,9% of the sample which corresponds to 39

individuals that only used the mask in closed spaces when felt the need. Furthermore, 120 individuals have detailed based on their answers that have “Followed/adopted most of the time” the use of mask in open spaces while 44 individuals - 10% - have claimed to have “Followed/adopted most the time” the use of mask in closed spaces, which brings this analysis all most to the end with 33% of the sample equivalent to 145 individuals that “Always followed/adopted” the use of mask in open spaces while 349 individuals, more than half of the participants, have affirmed to “Always followed/adopted” the use of mask in closed spaces.

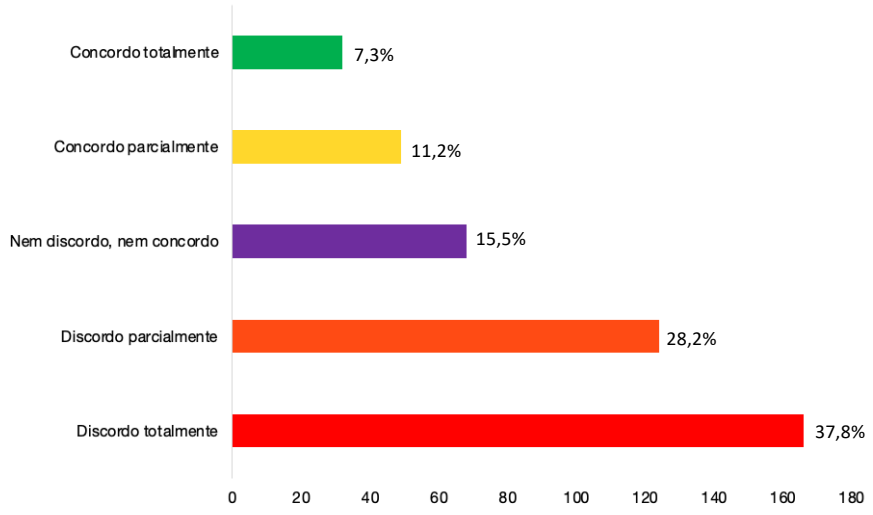
**Graphic 16.6-** Social distancing.




To end the Likert-scale question, the last mitigation measure to go under analysis is social distancing. As so, 39,4% of the sample, which corresponds to 173 individuals, affirmed to have “Always followed/adopted” social distancing during the Covid-19 pandemic. Moreover, 150 individuals - 34,2% - have claimed to have “Followed/adopted most of the time” social distancing from others, whereas 20,3% of the sample or 89 individuals only did so when felt necessary. Furthermore, 20 individuals - 4,6% - described that “Rarely followed/adopted” social distancing whereas only 7 participants “Never followed/adopted” social distancing throughout the pandemic.

**Graphic 17- Consider the trust you held in Government and DGS during the Covid-19 pandemic and rate the following statements.**

**Graphic 17.1 -** I consider that I did not trust the Government and DGS during the Covid-19 pandemic



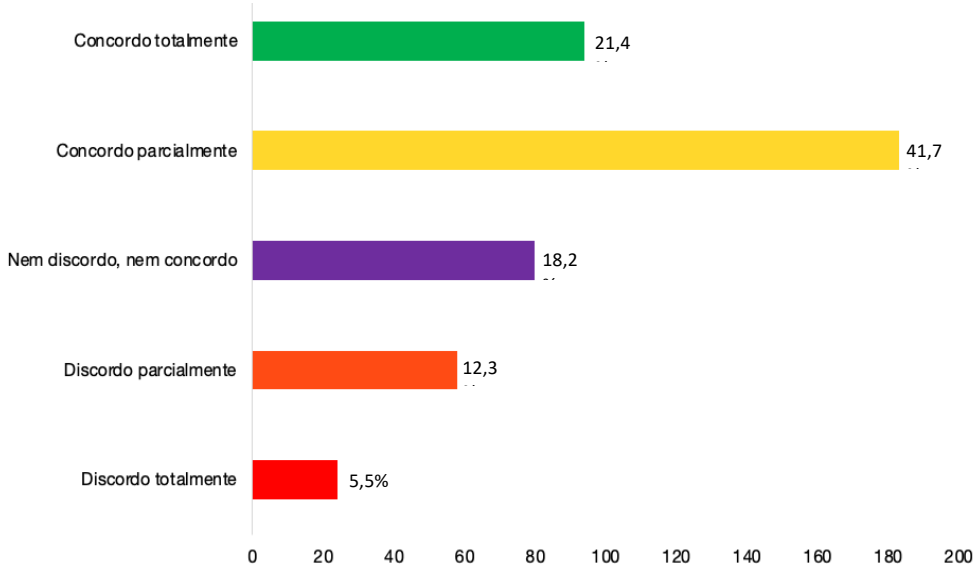

In what concerns the trust held in the Government and DGS during the Covid-19, 3 statements were provided to the respondents: "I consider that I did not trust the Government and DGS during the Covid-19 pandemic", "I believe that I have partly maintained confidence in the Government and DGS during the Covid-19 pandemic" and "I believe I fully trusted the Government and DGS during the Covid-19 pandemic". This graphical distribution corresponds to "I consider that I did not trust the Government and DGS during the Covid-19 pandemic" and could be classified based on 5 levels: "Totally disagree" represented by the color red, "Partially disagree" coded in orange, "Don't disagree nor agree" which corresponds to the middle column and purple color, "Partially agree" represented by yellow and lastly, "Totally agree", in green.

Hence, the confidence deposited by both generations - Millennials and Gen Z - on the Government and DGS seems to be present on 37,8% of the sample which equals to 166 individuals that classified the statement "**I consider that I did not trust the Government and DGS during the Covid-19 pandemic**" as "Totally disagree". Moreover, 28,2% which

corresponds to 124 individuals affirmed to "Partially disagree" with the provided statement which might indicate that although they do not fully disagree and therefore, had some trust in the Portuguese authorities.

Regarding those that "Don't disagree nor agree" 15,5% which is equivalent to 68 individuals, claimed not to have a formulated opinion on the trust towards the Government and DGS. Thus, 11,2% of the sample which corresponds to 49 individuals classified their trust on "Partially agree" and therefore, did not entirely trust the Government and DGS, whereas 32 participants or 7,3% of the sample, did not trust authorities in control to fight Covid-19 pandemic in Portugal.

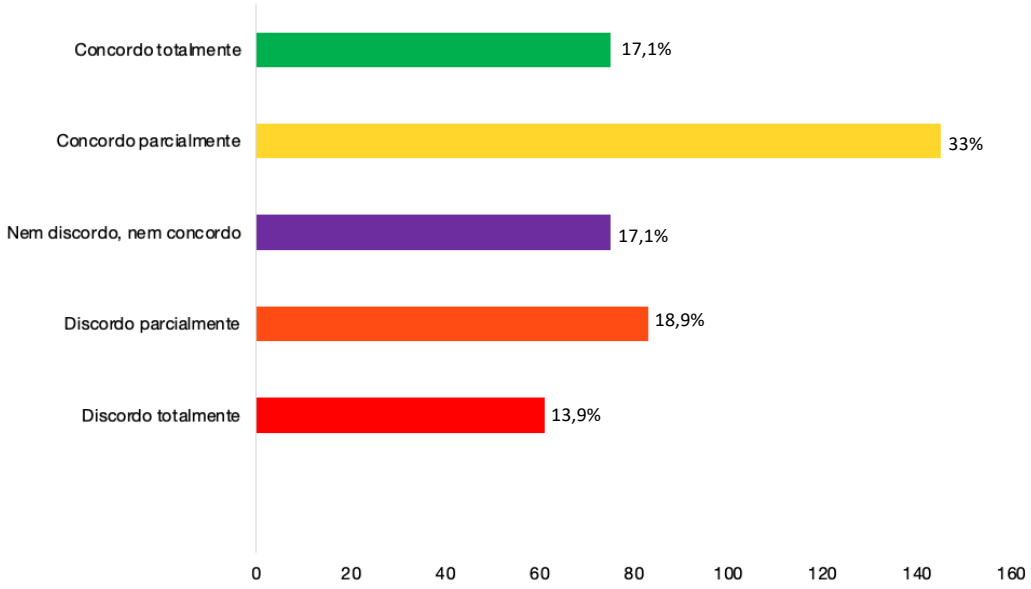
**Graphic 17.2 -** I believe that I have partly maintained confidence in the Government and DGS during the Covid-19 pandemic




The graphic distribution above represents the statement "**I believe that I have partly maintained confidence in the Government and DGS during the Covid-19 pandemic**" which obtained 5,5% of the sample directly corresponding to 24 individuals that "Totally disagree", while 12,3% of the sample which is equivalent to 58 individuals, "Partially disagree" on maintaining their confidence in the Government and DGS during the pandemic. Furthermore, 18,2% of the sample, which corresponds to 80 individuals claimed to not to have a formulated opinion and therefore admitted to "Don't disagree nor agree". Those who partly maintained their confidence are more pronounced on the "Partially agree" counting

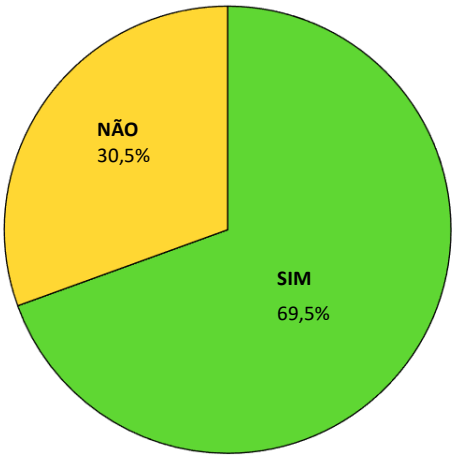
with 183 individuals which equals to 41,7% of the sample while 21,4% the remaining 94 individuals agree with the statement above and claimed to "Totally agree".

**Graphic 17.3 -** I believe I fully trusted the Government and DGS during the Covid-19 pandemic




Focusing on the last statement of this Likert-scale question, the participants had to classify the following statement: "**I believe I fully trusted the Government and DGS during the Covid-19 pandemic**". As observable, the graphical distribution from "Partially maintained" to "fully trusted" changes, having 13,9% of the sample which corresponds to 61 individuals describing that they "Totally disagree" with the statement and therefore, haven't fully trusted the Government and DGS and 18,9% of the sample, which is equivalent to 83 participants, "Partially disagree" with the statement provided. Moreover, 75 individuals or 17,1% of the sample "Don't disagree nor agree" while 33% of the sample - 145 participants - have affirmed to "Partially agree" whereas the remaining 17,1% or 75 individuals have affirmed to "Totally agree" with fully trusting the Portuguese political and health authorities to manage the epidemiological situation during the pandemic in Portugal.

**Graphic 18 - Do you consider that the degree of trust in the Government and DGS has conditioned your predisposition to follow the recommended mitigation measures?**

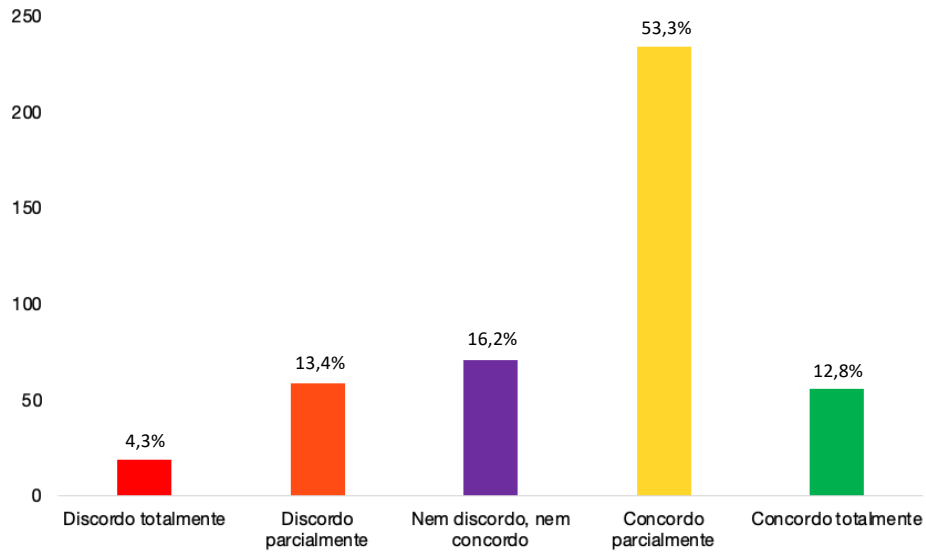



After analyzing which mitigation measures were adopted and how the Millennials and Gen Z felt towards the trust, it was interesting for this research to understand if those elements had any effect on the predisposition to follow the recommended mitigation measures. Therefore, the respondents had to choose between "Yes" coded in green and "No" coded in yellow on their predisposition to follow the measures imposed by the Government and DGS. As for the analysis, more than half of the sample (69,5%) which corresponds to 305 individuals affirmed "Yes", the trust in the Government and DGS did condition their predisposition to follow the mitigation measures whereas the remaining 30,5% of the sample, equivalent to 134 individuals, declared "No", it did not condition their preposition during the Covid-19 in Portugal.

Moreover, to deepen the analysis and fully capture where the participants laid their trust besides the official governmental and health institutions, it was required of the participants to describe which were information sources or institution if the answer to the previous question was "Yes". Therefore, the trust invested could be in: "Communication vehicles - Television and Newspaper", "Health Professionals", "Social Media", and "World Health Organization"; the responds could also provide an answer of their own on the "other" option. As observable in the previous question and graphical distribution 305 individuals

claimed to have been conditioned by their trust on the Portuguese authorities, however, only 150 participants detailed on which information sources and/or institutions they relied on. Since this question was a multiple choice, participants could choose more than one answer which resulted in 264 responses. With that being said, Communication vehicles such as Television and Newspapers got 100 responses which corresponds to 66,7%, followed by Health Professionals with the same responses and consequently, the same percentage - 66,7%. Moreover, 13 respondents named Social Media which is equivalent to 8,7%; 42 responses were on the WHO - World Health Organization - which corresponds to 6,3%. Still, there were 9 different responses on the "other option" as family, communication strategies from other countries and scientific articles.

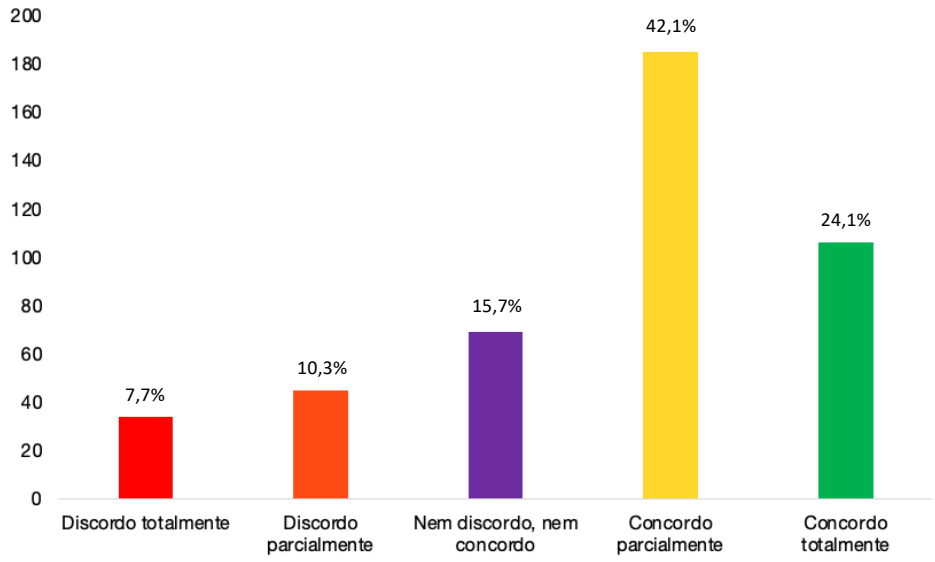
**Graphic 19 - The communication strategy by the Government and DGS was effective**




To end the online survey, the participants had to classify the following statements: "The communication strategy by the Government and DGS was effective"; "The use of social networks (Twitter, Instagram and Facebook) by the Government and the DGS influenced was effective to influence my attitudes in mitigating the pandemic" and "The Portuguese population accepted and put into practice all the instructions recommended by the Government and the DGS." The respondents had to choose between: "Totally disagree"

represented by the color red, “Partially disagree” coded in orange, “Don’t disagree nor agree” which corresponds to the middle column and purple color, “Partially agree” represented by yellow and lastly, “Totally agree” in green. Therefore, when asked regarding the effectiveness of the communication strategy the general opinion “Partially agree” counting with 53,3% of the sample which is equal to 234 individuals, followed by 16,2% of the sample or 71 individuals that “Don’t disagree nor agree”. Moreover, 13,4% of the sample which corresponds to 54 individuals claim to “Partially disagree” with the statement provided whilst 12,8% of the sample or 56 individuals believe otherwise, they “Totally agree”. The remaining 4,3% of the sample which is equivalent to 19 participants “Totally disagree”.

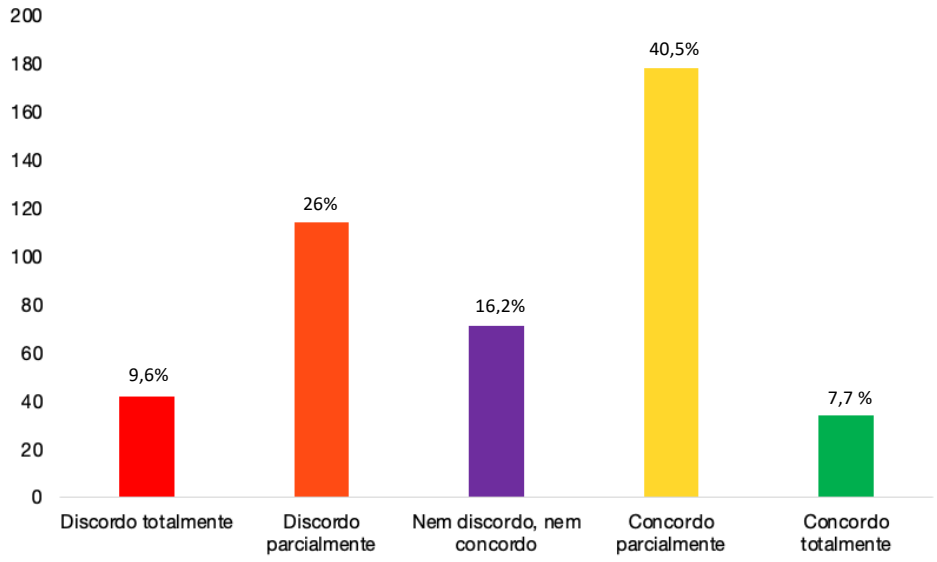
**Graphic 20 - The use of social networks (Twitter, Instagram and Facebook) by the Government and DGS influenced was effective to influence my attitudes in mitigating the pandemic**




The second statement refers to how the use of social media such as Twitter, Instagram, and Facebook of the Government and DGS influenced the participants to be more conscious and help to mitigate the Covid-19 pandemic, to which, the participants had to classify it following the same Likert-scale approach. Therefore, analyzing the graphical

distribution its perceivable that 42,1% of the sample which corresponds to 185 individuals "Partially agree" with the provided statement followed 24,1% of the sample which equals to 106 individuals that do "Totally agree" which means that for these individuals the use of social networks indeed had the predicted or wanted result. On the other hand, 15,7% of the sample, which is equivalent to 69 participants, affirmed "Don't disagree nor agree" with being influenced by Twitter, Instagram, nor Facebook. Although having a high percentage of positive outcomes, still 10,3% of the sample, which corresponds to 45 individuals claimed to "Partially disagree" whereas the remaining 7,7% of the sample or 34 participants "Totally disagree" with the statement.

**Graphic 21 - The Portuguese population accepted and put into practice all the instructions recommended by the Government and DGS.**




To end this Likert-scale question, this research needed to also understand how well did the Portuguese population accept and put into practice all the recommendations given by the Government and DGS in order to mitigate the Covid-19 pandemic, in Portugal. Having an idyllic situation the green column should have the highest percentage however, as observable that is not the case. Furthermore, in comparison with the two previous graphics, the graphical distribution has the lowest percentage on "Totally agree" counting with 7,7%

of the sample which corresponds to 34 individuals that do believe that the Portuguese population took upon the recommendations and applied them. Following with 9,6% of the sample or 42 participants believe otherwise and have affirmed to “Totally disagree” with the provided statement which means that the Portuguese population did not accept and did not put them into practice. Still, 16,2% of the sample, which corresponds to 71 individuals, do not have a formulated opinion and claimed to “Don’t disagree nor agree”. The two last columns contrast with each other, having on one hand 26% of the sample or 114 individuals that “Partially Disagree” with the statement whereas 40,5 % of the sample which corresponds to 178 individuals “Partially agree” that the Portuguese population has accepted and followed the recommendations of the Government and DGS.

## 5. Critical reflection

This section is the last part of the empirical research and has as its main objective to highlight the most relevant aspects to be taken from the results of the online survey and qualitative research and thus answer the research question: **"What was the crisis communication strategy followed by the Portuguese authorities during the first two years of the pandemic, and how did it impact the Portuguese Millennials and Z generation?"**. Furthermore, the critical reflection approaches the most relevant results and conclusions based on the graphical distributions presented in the previous subchapter. Aligned with this, the information obtained was also combined with the conceptual framework, and therefore, the reflection presented beneath is the result of the knowledge obtained through theoretical analysis and analysis of the online survey results. The survey was built in order to assess three aspects: Sources of Information on Covid-19 Pandemic; Trust, Transparency and Effectiveness in the Communication Strategy of the Government and Health Authorities; and Adherence to Covid-19 Mitigation Measures. We will therefore organize this critical reflection accordingly.

### Sources of Information on Covid-19 Pandemic

Throughout the pandemic information sources have been questioned for the truthfulness of information, taking into consideration that a health situation as this one creates a massive overload of information and its veracity is questioned. As mentioned, the WHO has classified the Covid-19 pandemic information as an "infodemic" (Lopes et al, 2021b) and several other authors approach it as "a global epidemic of disinformation" (Zaracostas, 2020). For this reason, it was interesting to understand which information sources the Millennials and Z generations used to obtain insights from the Covid-19 pandemic. Observable on the graphics 6 and 7, the most used information source was Television which, after being considered "as dead" (Katz & Scannnel, 2009) against all odds, turned out to be the most used communication medium having 80,2%; when participants were questioned which information sources they mostly used 38,7% of them referred television.

Therefore, Television was the most dominant medium during the first two years of the Covid-19 pandemic for the Millennials and Z generations, being denoted as "window to the world" or as a new social intermediary (Cunha *et al*, 2021) as previously mentioned. However, this exponential growth of Television can be explained due to the confinement felt worldwide, and also in Portugal, which amplified its use which can also be corroborated by the frequency of use of this medium. When asked how often the participants used the information sources provided 61,7% used it daily between 1 to 5 times a day.

Still onto this topic, social media was the center of mis-information and dis-information, since users knowingly or unknowingly spread false information that could damage the efforts being made by national authorities (mainly the Government and DGS) to keep the public at ease and informed on the new pandemic. After questioning the participants, 392 claimed to have encountered fake news on social media which corroborates with Ireton & Posetti (2018) and Wardle and Derakhshan (2017) on the phenomenon felt on social media known as "information disorder" which contained falsity and intention.

**Trust, Transparency and Effectiveness in the Communication Strategy of the Government and Health Authorities**

This particular section "Trust, Transparency and Effectiveness in the Communication Strategy of the Government and Health Authorities" has a direct link with Public Perception, since public trust in institutions helps to manage risk communication when reliable information is provided, but also to "empower more-effective risk communication and help people to keep their concerns in perspective" (Gray and Ropeik, 2002:110). Therefore, the representative sample gathered of Millennials and Z generations has proven that, overall, the information sources available have been sufficient to keep the Portuguese population informed especially on the evolution of Covid-19 pandemic. Thus, when questioned on the provided information by the authorities on administrative affairs such as obtaining isolation or medical discharge certificates and/or justification of absences - the outcome shifted resulting in two different angles: 211 (48,19%) individuals do not agree that the information provided was sufficient to keep them informed whereas 228 (51,90%) individuals do believe

otherwise, which might indicate that on health management matters the Portuguese leaders were not able to communicate as well as in other areas.

Moreover, several questions were made to let the participants share their opinion on how the Government and DGS controlled the Covid-19 pandemic in Portugal. The analysis of the open-ended questions and closed-ended questions allowed to take some insights on the Millennials and Z generations sentiments towards the Government and DGS. Although the population felt informed enough and aware of the health situation, the Government and health authorities somehow transmitted dubious and alarming information which transformed into fear and panic as described by many respondents on the open-ended question. Diana Mendes, DGS's Head of Communication and Public Relations affirmed "the need of clear messages is not compatible with the speed of scientific knowledge and generates contradictory or apparently contradictory messages" (Diana Mendes, 2021) which also corroborates with Fischhoff's (2015) idea of why this phenomenon happens, when there is a lack of information as well as familiarity with a new disease which leads to a more anxious public who then can lead to more complex emotions and potentially increase in dismissing risk and the adherence to mitigation strategies.

As so, regarding the perspective of Millennials and Z generations it is possible to affirm that there are two distinctive sides, meaning that the sample is divided on how the Government and DGS dealt with the overall communication. As observable on the graphic 12, which includes graphics 12.1 to 12.7 there is clearly a pattern on the results meaning that the feedback from the participants was coherent to their sentiment towards the national authorities. For example: 26,4% of the Millennials and Z generations displayed lack of confidence on how the Portuguese Government and DGS dealt with the pandemic especially while instituting a fear and panic policy, whereas 25,10% believe otherwise, and 24,1% did not have an opinion. Moving to the clearness and transparency of communication, 33,5% agree that the government was clear and straightforward while 28,5% do not agree. Though, regarding the effectiveness of communication, the results had a more direct outcome having 203 (46,2%) Millennials and/or Gen Z participants agreeing with the effectiveness of communication while only 93 (21,2%) did not agree, and what does it mean? It might be the indicative that, within the overall panorama the Portuguese

population represented by this sample,  they felt that the communication was effective even though it had its issues.

Focusing on the communication strategies developed by the Government present on the external communication strategy as described on the qualitative research, it has six main elements: (1) Covid-19 webpage within the official Health Minister website ; (2) daily press conferences broadcasted live on Facebook; (3) a daily epidemiological bulletin published on DGS's website and (4) guides for health organizations and professionals, citizens, and private agents ; (5) the creation of social media platforms and an update Facebook page to communicate with the Portuguese population; (6) app StayAway Covid. As observable on the graphic 14 the participants reported to have known most of the strategies however the daily press conferences and the App StayAway Covid were the two most known gathering more than 70% respectively, whereas strategies as social media, television ads and the television campaign sponsored by DGS "*Somos todos uma voz*" did not reach such higher views. It is most understandable why the daily press conferences and the app obtained these results, being one of them the main source providing information regarding the daily situation of Covid-19 in Portugal and the measures to adopt and the other an innovative mobile app that would allow to detect if one had been in contact with an infected person. Moreover, Covid-19 webpage within the official Health Minister website and DGS's social media also registered good results achieving individually more than 50% of awareness.

**Adherence to Covid-19 Mitigation Measures**

The last section of the online survey "Adherence to Covid-19 Mitigation Measures" aimed to perceive if the population was indeed influenced and adopted the mitigation measures recommended by the Government and DGS. Until this point, the previous sections analyzed how the sample of Millennial and Z generations felt towards the communication strategy in Portugal and which sources they used to be informed. This section will help to determine if the population adopted the mitigation measures as required; Starting off with a simple and concise question which more than half of the participants reported that felt influenced to follow/adopt the mitigation measures during the whole duration of the pandemic, as observable on the graphic 15.

As for those who did not feel as following the measures recommended, the motives were based on political ideologies and personal opinions of how the government dealt with decision making. Furthermore, when analyzing how and which measures were adopted the results overall, they indicate that the measures were indeed followed, the only two exceptions were people who felt "freer" to dismiss the rules. Slovic (1987) and Covello *et al* (1988) explained that outrage helps to shape acceptability and adherence to mitigation measures, such as social distancing and masks (Malecki *et al*, 2021) In this case, the two exceptions were indeed the use of marks outside - some of the respondents have reported that while being outside did not feel the need/made sense to use mask - and social distancing. Thus, perception of risk is a crucial element when it comes to making decision on which course of action to go for, which for many people might not be the same, ultimately leading to different approaches to mitigation measures. In this sense, as Malecki *et al* (2021) concluded, outrage elements shape risk perception which then will determine how and why the public reacts and responds.

Moreover, the adherence of the mitigation measures can be linked to the level of trust that each individual has in the Government and DGS to which Fischhoff (2015) and Gray and Ropeik (2002) report that public trust in institutions is essential to help manage risk perception. In this sense, and analyzing the graphic 18, the results were that 69,5% - 305 participants - do believe that the level of trust did condition their predisposition to follow the mitigation measures to control the Covid-19 in Portugal which might express that although the population did have some trust in the Government it was not enough to help manage risk perception and entirely follow the measures recommended.

To conclude, half of the Millennial and Z generations rated the Government and DGS's communication strategy and the use of social media as Twitter, Instagram and Facebook to influence the Portuguese population as efficient, which stands for an approval of a "job well done". However, concerning the acceptance and willingness to pursue all the mitigation measures the outcome turned out to be different having 154 participants expressing that the Portuguese population did not accept nor follow the measures to control the pandemic - 197 claim that the efforts made worked and the measures were followed, and 71 individuals did not share any of these beliefs.

## CONCLUSION

The current dissertation had as main objective to analyze the *modus operandi* of the Portuguese health authorities on the communication strategies implemented to mitigate the Covid-19 outbreak during the two first years of the pandemic - 2020 and 2021 - as well as the public perception of Millennials and Z generation having as contextual grounding the Portuguese case. As a recent and relevant topic in the academic field, this research intends to be a contribution for the analysis of Crisis Communication within a public health crisis as well as the Public Perception of an unprecedented situation, appointed by Timothy Coombs (2020) as a "black swan crisis". In broad sense, a crisis can have different definitions based on its type and the majority of them, approached in the theoretical analysis, have as common element the natural emergence within organizational/corporative grounds. However, a public health crisis such as Covid-19 addresses not only an organizational dynamic but also social, political, and economic which according to Shrivastava and Mitroff (1987) equals to catastrophes. Therefore, Covid-19 pandemic, for these authors, is indeed a catastrophe that has provoked structural changes on societal and economic fields globally which are naturally negative situations.

Yet, Covid-19 pandemic is a unique situation. The outbreak can be classified as a natural hazard or hybrid crisis meaning that causes social disruption and fatalities (Hood and Jackson, 1991; Cutter, 2017). The initial years of the pandemic have shaped how Governments and Health authorities execute crisis management under pressure, but also how they communicate in a public health crisis which, in the long-run, will be helpful to prepare and prevent future situations, and the Portuguese case is not the exception. Portugal aimed to institute a clear, objective, and transparent communication promoting updated information in each phase of the pandemic, health literacy, and risk perception, however it was described by Millennials and Z generation that, even though disseminating useful and sufficient information, the communication had its difficulties and complexities, and a fear and panic policy have been installed.

Additionally, emotional response - outrage or hazard - during a health crisis as Covid-19 have a determinant role in the population's risk perception which is directly linked with the success of the crisis communication, mainly on the acceptability and adherence to

mitigation measures to fight a natural hazard of unknown characteristics and fast spread. Despite that, Portuguese Millennials and Z generation felt that the governmental authorities conducted a fear and panic policy that did not totally influence the outcome of the adherence to mitigation measures nor its effectiveness. Thus, the results obtained reveal that for the Millennial and Z generation the communication strategy was effective in maintaining the majority of the time confidence on the authorities and following the rules as a contribution to the well-being of the Portuguese population and well-fair of the Portuguese economy.

## FUTURE RESEARCH OPPORTUNITIES

Concerning future research opportunities, throughout this investigation different takeaways arose, starting with the comeback of television as the most used source of information by Millennials and Z generation during the public health crisis, Covid-19 pandemic. Taking into consideration that television was pronounced as "dead", as detailed during the theoretical and methodological analysis, it would be interesting for further investigation to understand in depth how and why television became, once more, "alive" and seen as a trustworthy medium. Moreover, as this research addresses the communication strategy of institutional organizations as the Portuguese Government and DGS, having their feedback on semi-structured interviews would allow a better comprehension of the crisis management during the public health crisis as well as the course taken and multiple phases of the communication strategy as DGS's Head of Communication and Public Relations, Diana Mendes expressed the complexity of sharing scientific knowledge in time and through simple and straightforward messages to the public audience. Adding, emotions also play a crucial role on the success of a crisis communication and being still a thematic that has not been much explored, it would be interesting to perceive how the population reacts, what it communicates during a pandemic, which emotions do they display and how are they triggered.

**REFERENCES**


Adams, A.M., Smith, A.F., (2001). Risk perception and communication: recent developments and implications for anaesthesia. Anaesthesia; 56(8):745-55. doi: 10.1046/j.1365-2044.2001.02135.x. PMID: 11493237.

Afolabi M,O., (2018). Public Health Disasters. Public Health Disasters: A Global Ethical Framework. 12:1–24. doi: 10.1007/978-3-319-92765-7_1

Allam, Z., (2020a). Chapter 1 - The First 50 days of Covid-19: A Detailed Chronological Timeline and Extensive Review of Literature Documenting the Pandemic. Elsevier. 1-7 https://doi.org/10.1016/B978-0-12-824313-8.00001-2

Allam, Z,.(2020b). Chapter 2 - The Second 50 days: A Detailed Chronological Timeline and Extensive Review of Literature Documenting the COVID-19 Pandemic From Day 50 to Day 100, Surveying the Covid-19 Pandemic and its Implications, Elsevier. 9-39 https://doi.org/10.1016/B978-0-12-824313-8.00002-4

Al-Jazairi, A.F. (2017) Disasters and disaster medicine. In Essentials of Accident and Emergency Medicine, edited by Alsheikhly,A.S. IntechOpen, London, UK, pp. 93-118.

Alhakami, A.S., & Slovic, P. (1994). A psychological study of the inverse relationship between perceived risk and perceived benefit. Risk analysis : an official publication of the Society for Risk Analysis, 14 6, 1085-96 .

Antonakis, J. (2012). Transformational and Charismatic Leadership. In D. V. Day, & J. Antonakis (Eds.), The Nature of Leadership (pp. 256-88). Thousand Oaks, CA: Sage Publications.

Bankoff, G. and Hilhorst, D. (2009), The politics of risk in the Philippines: comparing state and NGO perceptions of disaster management. Disasters, 33: 686-704. https://doi.org/10.1111/j.1467-7717.2009.01104.x

Barouch, D.H. (2022) Covid-19 Vaccines - Immunity, Variants, Boosters. N Engl J Med. 387(11):1011-1020. doi: 10.1056/NEJMra2206573.

Bass, B. M. (1985). Leadership and performance beyond expectations. New York: Free Press.

Beck, Ulrich (1992). Risk Society: Towards a New Modernity. Trans. By Mark Ritter. London: Sage Publications

Benoit, W.L. (1997). Image repair discourse and crisis communication, Public Relations Review 23 (2) 177–186, https://doi.org/10.1016/S0363-8111(97)90023- 0.

Benoit, W.L. & Pang, Augustine. (2008). Crisis communication and image repair discourse. Public relations: from theory to Practice. 245-261.

Bernard, R.N et al. (2021). Analysis of crisis communication by the Prime Minister of Australia during the COVID-19 pandemic. International Journal of Disaster Risk Reduction. Doi: https://doi.org/10.1016/j.ijdrr.2021.102375

Black, Iain. (2006). The presentation of interpretivist research. Qualitative Market Research: An International Journal. 9. 319-324. 10.1108/13522750610689069.

Bradford, J. L., & Garrett, D. E. (1995). The effectiveness of corporate communicative responses to accusations of unethical behavior. Journal of Business Ethics, 14(11), 875-892

Boin, A & Hart P., (2003). Public Leadership in Times of Crisis: Mission Impossible? Public Administration Review, Vol 63, No. 5, pp.544-553. Published by Wiley on behalf of the American Society for Public Administration.

Bontempo, R., Bottom, W., Weber, E. (1996). Cross-Cultural Differences in Risk Perception: A Model-Based Approach. Risk Analysis. 17. 10.1111/j.1539-6924.1997.tb00888.x.

Borges, V., Isidro, J., Trovão, N.S. *et al*. (2022). SARS-CoV-2 introductions and early dynamics of the epidemic in Portugal. Commun Med 2, 10 https://doi.org/10.1038/s43856-022-00072-0

Bruine de Bruin W, Bennet D. (2020). USC study finds increasing actions and risk perceptions for coronavirus. Coronavirus (COVID-19). University of Southern California, USC Leonard D. Schaeffer Center for Health Policy and Economics.

Bryman, A. (1993). Charismatic leadership in business organizations: Some neglected issues. The Leadership Quarterly, *4*(3-4), 289–304. https://doi.org/10.1016/1048-9843(93)90036-S

Burkle, F.M. Jr (2019). Challenges of Global Public Health Emergencies: Development of a Health-Crisis Management Framework. Tohoku J Exp Med. 249(1):33-41. doi: 10.1620/tjem.249.33. PMID: 31548492.

Cabrera, A., Martins, C., & Cunha, I. F. (2020). A cobertura televisiva da pandemia de Covid-19 em Portugal: um estudo exploratório. Media & Jornalismo, 20(37), 185-204. https://doi.org/10.14195/2183-5462_37_10

Chemers, M. M. (2000). Leadership research and theory: A functional integration. Group Dynamics: Theory, Research, and Practice, 4, 27-43.

Cheng, Y. (2016). How social media is changing crisis communication strategies: Evidence from updated literature, Journal of Contingencies and Crisis Management 26 (1). https://doi.org/10.1111/1468-5973.12130.

Clark, P.L.V., & Creswell, W.J., (2008) The Mixed Methods Reader. SAGE Publication, Inc.

Conger, J. A., & Kanungo, R. N. (1987). Toward a behavioral theory of charismatic leader- ship in organizational settings. Academy of Management Review, 12, 637-647.

Conger, J. A., & Kanungo, R. N. (1998). Charismatic leadership in organizations. Thousand Oaks, CA: Sage.

Coombs, W.T. (1995). Choosing the Right Words: The development of guidelines for th selection of the "Appropriate" Crisis-Response Strategies. Management Communication Quarterly. Doi:10.1177/0893318995008004003

Coombs, W.T. (2007). Protecting Organization Reputations During a Crisis: The Development and Application of Situational Crisis Communication Theory. Corporate Reputation Review, 10, 163-176. doi:10.1057/palgrave.crr.1550049

Coombs, W.T., Holladay, S.J. (2010). The handbook of crisis communication, John Wiley & Sons, 2010.

Coombs, W. T. (2015). *Ongoing Crisis Communication - Planning, Managing, and Responding*. s.l.:SAGE Publications.

Coombs, W.T. (2020). Public Sector Crises: Realizations from Covid-19 for Crisis Communication. PARTECIPAZIONE E CONFLITTO, North America. Available at: http://siba-ese.unisalento.it/index.php/paco/article/view/22498

Correia PMAR, Mendes IdO, Pereira SPM, Subtil I. (2020a). "The Combat against COVID-19 in Portugal: How State Measures and Data Availability Reinforce Some Organizational Values and Contribute to the Sustainability of the National Health System.", Sustainability 2020, No. 12, Lisboa: Universidade de Lisboa, pp.2-13. doi:10.3390/su12208715

Correia PMAR, Mendes IdO, Pereira SPM, Subtil I. (2020b). The Combat against COVID-19 in Portugal, Part II: How Governance Reinforces Some Organizational Values and Contributes to the Sustainability of Crisis Management. Sustainability. 12(20):8715. https://doi.org/10.3390/su12208715

Correia , M., Moreira, M. (2014). Novas Formas de Comunicação: História do Facebook - Uma História Necessariamente Breve, 168 - 187.

Covello, V.T., Sandman, P.M., Slovic, P. (1988). Risk communication, risk statistics, and risk comparison: a manual for plant managers. Washington, DC: Chemical Manufacturers Association

Creswell, J. W. (2014). Research Design: Qualitative, Quantitative and Mixed Methods Approaches (4th ed.). Thousand Oaks, CA: Sage.

Cutter, S., (2017) The Perilous Nature of Food Supplies: Natural Hazards, Social Vulnerability, and Disaster Resilience, Environment: Science and Policy for Sustainable Development, 59:1, 4-15, DOI: 10.1080/00139157.2017.1252603

Darling, R.J. (1994) "Crisis Management in International Business – Key to Effective Decision Making." Leaderships & Organization Development Journal, No.2, pp-3-8.

Doyle, L., Brady, A-M., Byrne G. (2009). An overview of mixed methods research. *Journal of Research in Nursing*. 2009;14(2):175-185. doi:10.1177/1744987108093962.

Farazmand, A. (2001). Handbook of crisis and emergency management: CRC Press.

Ferreira-da-Silva, R., Mário, A., Conceição, J. (2022). A pandemia de COVID-19 em Portugal: Evolução, Vacinação e Farmacovigilância. revistamultidisciplinar.com. 4. 135-154. 10.23882/rmd.22090.

Finch *et al*. (2016). Public health implications of social media use during natural disasters, environmental disasters, and other environmental concerns. SpringerLink. doi: 10.1007/s11069-016-2327-8

Fischhoff B. (2015). The realities of risk-cost-benefit analysis. Science.

Fortin, M.F. (2009) Fundamentos e etapas do processo de investigação. Lisboa, Lusodidacta

Fowler, J., Floyd J. (1995). Improving survey questions: Design and evaluation. (Vol. 38). Thousand Oaks, CA: Sage Publications.

Fullerton, N. (2021). 'Instagram vs. Reality: The Pandemic's Impact on Social Media and Mental Health.' Penn Medicine News, 29 April.

Gigliotti, R. (2019). Crisis Leadership in Higher Education: Theory and Practice. 10.2307/j.ctvscxrr0.

Goldkuhl, Göran. (2011). Design Research in Search for a Paradigm: Pragmatism Is the Answer. Communications in Computer and Information Science. 286. 10.1007/978-3-642-33681-2_8.

Gonçalves, G., Piñeiro-Naval, V., e Toniolo,B. (2021). «Em Quem Confiam os Portugueses? A Gestão da Comunicação Governamental na Pandemia Covid-19», Comunicação e sociedade http://journals.openedition.org/cs/6170

Gotsi, Manto & Alan, Wilson. (2001). Corporate Reputation: Seeking a Definition. Corporate Communications: An International Journal. 6. 24-30. 10.1108/13563280110381189.

Gray, G., Ropeik, D. (2002). Dealing With The Dangers Of Fear: The Role Of Risk Communication. Health affairs (Project Hope). 21. 106-16. 10.1377/hlthaff.21.6.106.

Glik, D., (2007). Risk communication for public health emergencies. Annu Rev Public Health, 28:33–54.

Grunig, J., Hunt, Todd. (1984). Managing Public Relations.

Guimarães, T.; Gomes, A.; Correia, P.; Jesus, I.; Piazentin, T. (2017). Role conflict and role ambiguity in the work of judges: The perceptions of Portuguese judges. Braz. J. Public Adm. 51, 927–946.

Hachmann, P.N., Miller, J., Collier Y., Barouch H.D. (2022). Neutralization Escape by SARS-CoV-2 Omicron Subvariant BA.4.6. N Engl J Med387:20, 1904-1906. doi:10.1056/NEJMra2206573

Halcomb, E.J., & Hickman, L. (2015). "Mixed methods research" Faculty of Science, Medicine and Health - Papers: part A. 2656.

Halverson, S. K., Murphy, S. E., & Riggio, R. E. (2004). Charismatic leadership in crisis situations: A laboratory investigation of stress and crisis. Small Group Research, 35(5), 495–514. https://doi.org/10.1177/1046496404264178

Haven, L.T & Grootel, L.V. (2019). Preregistering qualitative research, Accountability in Research, 26:3, 229-244, DOI: 10.1080/08989621.2019.1580147

Heath, R.L., & O'Hair, H.D. (2008). Handbook of Risk and Crisis Communication (1st ed.). Routledge. https://doi.org/10.4324/9780203891629

Hermann, C. F. (1963). Some consequences of crisis which limit the viability of organizations. Administrative Science Quarterly, Volume 8, p. 61–82.

Hilhorst, D. (Ed.). (2013). Disaster, Conflict and Society in Crises: Everyday Politics of Crisis Response (1st ed.). Routledge. https://doi.org/10.4324/9780203082461

Holland, D., Seltzer, T., Kochigina, A. (2021) Practicing transparency in a crisis: Examining the combined effect of crisis type, response, and message transparency on organizational perceptions. Public Relations Review 47. Published by Elsevier Science Inc.

House, R.J. (1977). "A 1976 Theory of Charismatic Leadership," in J. G. Hunt and L. L. Larson (Eds.) Leadership: The Cutting Edge, Carbondale: Southern Illinois University Press.

Huot, R. (2002). Métodos quantitativos para as ciências humanas (tradução de Maria Luísa Figueiredo). Lisboa: Instituto Piaget.

Huang C, Wang Y, Li X, et al. (2020). Clinical Features of Patients Infected With 2019 Novel Coronavirus in Wuhan, China. The Lancet 395: 497e506.

Huang, Y. (2006). Crisis Situations, Communication Strategies, and Media Coverage: A multicase study revisiting the Communicative Response Model. Communication Research, 33: 180. Published by SAGE. Doi: 10.1177/0093650206287077

Hunt, J. G., Boal, K. B., & Dodge, G. E. (1999). The effects of visionary and crisis-responsive charisma on followers: An experimental examination of two kinds of charismatic leadership. The Leadership Quarterly, 10, 423-448.

Indolfi, C., & Spaccarotella, C. (2020). The Outbreak of COVID-19 in Italy: Fighting the Pandemic. JACC. Case reports, 2(9), 1414–1418. https://doi.org/10.1016/j.jaccas.2020.03.012

Ireton, C., & Posetti, J. (2018). Journalism, fake news & disinformation: handbook for journalism education and training. Paris: UNESCO.

Jackson II, L.R., Drummond K.D., & Camara, S. (2007) What Is Qualitative Research?, Qualitative Research Reports in Communication, 8:1, 21-28, DOI: 10.1080/17459430701617879

Jackson, M & Hood, C. (1991). "The New Public Management: A Recipe for Disaster?". Canberra Bulletin of Public Administration. 12-17.

James, E.H. and Wooten, L.P. (2010) Leading Under Pressure. Routledge, New York.

Jeyanathan, M., Afkhami, S., Smaill, F. et al. (2020). Immunological considerations for COVID-19 vaccine strategies. Nat Rev Immunol 20, 615–632 https://doi.org/10.1038/s41577-020-00434-6

Jin, Y., Pang, A., & Cameron, G. T. (2007). Integrated Crisis Mapping: Toward a Publics-Based, Emotion-Driven Conceptualization in Crisis Communication. Sphera Pública, (7),81-95. ISSN: 1180-9210. https://www.redalyc.org/articulo.oa?id=29720421006

Johnson, K, S., Riggio,E,R., Murphy, S., (2004) Charismatic Leadership in Crisis Situations a Laboratory Investigation of Stress and Crisis. Small Group Research, Vol 35 No. 5, 495-514. Published by SAGE. Doi: 10.1177/1046496404264178

Johnson, Victoria & Peppas, C. Spero (2003) "Crisis Management in Belgium – The Case of Cola-Cola. Corporate Communications – An International Journal, No.1, pp-18-22. 10.1108/13563280310458885.

Kash, T.J., & Darling, J.R. (1998). Crisis management: prevention, diagnosis and intervention. Leadership & Organization Development Journal, 19, 179-186.

Kasperson, R. E., Renn, O., Slovic, P., Brown, H. S., Emel, J., Goble, R., Kasperson, J. X., & Ratick, S. (1988). The social amplification of risk: A conceptual framework. Risk Analysis, 8(2), 177–187. https://doi.org/10.1111/j.1539-6924.1988.tb01168.x

Kets de Vries, F. R. (1988). Prisoners of leadership. Human Relations, 41, 261-280.

Kern, K.; Bulkeley, H. (2006) Local Government and the Governing of Climate Change in Germany and the UK. Urban Stud. 43, 2237–2259.

Kim, Y., Cha, H., & Kim, R.J (2008). Developing a Crisis Management Index - Applications in South Korea, Journal of Public Relations Research. Vol.20, pp. 328-355.

Kim, J.N., Grunig E.J., (2011).Problem Solving and Communicative Action: A Situational Theory of Problem Solving, Journal of Communication, Volume 61, Issue 1, Pages 120–149, https://doi.org/10.1111/j.1460-2466.2010.01529.x

Kittler AF, Hobbs J, Volk LA, Kreps GL, Bates DW., (2004) The internet as a vehicle to communicate health information during a public health emergency: a survey analysis involving the anthrax scare of 2001. J Med Internet Res; 6(1):e8.

Khodarahmi, E., (2009) "Crisis Management." Disaster Prevention and Management, No.5, pp-523-528. 10.1108/09653560911003714.

Kuipers, S. & Welsh, N., (2017). Taxonomy of the Crisis and Disaster Literature: Themes and Types in 34 Years of Research. Risk, Hazards & Crisis in Public Policy. 8. 10.1002/rhc3.12123.

Lampreia, J. M., (2007). Da Gestão de Crise ao Marketing de Crise. 1a Edição ed. Lisboa: Texto Editores.

Lagadec, P., (1987) Communications Strategies in Crisis Situations.

Larsson, J., & Peter R., (2010) "Bachelor thesis. Crisis Management – Media's perception of Crisis in Organizations", Department of Business Administration and Social Sciences, pp.1-78.

Laufuer, D. & Wang, Y., (2017) Guilty by association: The risk of crisis contagion. Kelly School of Business, Indiana University. Published by Elsevier Inc.

Leedy, P. & Ormrod, J., (2001) Practical Research: Planning and Design. 7th Edition, Merrill Prentice Hall and SAGE Publications, Upper Saddle River, NJ and Thousand Oaks, CA.

Lerbinger, O., (1997). The crisis Manager: facing risk and responsability. Nova Jérsia: Lawrence Erlbaum Associates Publishers.

Lev-On, A., (2011) Communication, community crisis: Mapping uses and gratifications in the comtemporary media environment. New media & society. 14 (1) 98-116. Doi: 10.1177/1461444811410401

Lee J.Y & Sundar S.S., (2013). To Tweet or to Retweet? That Is the Question for Health Professionals on Li Q, Guan X, Wu P, et al. (2020) Early Transmission Dynamics in Wuhan, China, of Novel Coronavirus Infected Pneumonia. 382: 1199e1207.

Leung, L., (2013) Generational Differences in Content Generation in Social Media: The Roles of the Gratifications Sought and of Narcissism. Computers in Human Behavior, 29, 997-1006. https://doi.org/10.1016/j.chb.2012.12.028

Lopes, F., Araújo, R., & Magalhães, O., (2021). Covid-19: Uma Pandemia Gerida Pelas Fontes Oficiais Através de uma Comunicação Política. Comunicação E Sociedade, 40, 17–32. https://doi.org/10.17231/comsoc.40(2021).3520

Lopes, F., Santos, C., Magalhães, O., Burnay, C., Araújo, R., Sá. A. (2021). A cobertura noticiosa da pandemia: um retrato dos dilemas e práticas profissionais na era Covid-19. Mediapolis - Revista de Comunicação, Jornalismo e Espaço Público, 13, 109-123 https://doi.org/10.14195/2183-6019_13_6

Malik, A., Khan, L.M., Quan-Haase, A., (2021) Public health agencies outreach through Instagram during COVID-19 pandemic: Crisis and Emergency Risk Communication perspective. International Journal of Disaster Risk Reduction. Published by Elsevier Inc. Doi: https://doi.org/10.1016/j.ijdrr.2021.102346

Marques, V., (2020). Redes Sociais 360 Como comunicar online. Lisboa: Actual.

Maxwell, J. A., (1996). Qualitative Research Design: An Interactive Approach. 1a ed. London: SAGE Publications.

Mendes, A. M. et al., (2006). Crises de Ameaças a Oportunidades - Gestão Estratégica de Comunicação de Crise. 1a Edição ed. Lisboa: Edições Sílabo.

Mertler, C., (2016) Introduction to Educational Research: Chapter 7 Quantitative Research Methods. SAGE Publications, First Edition, 108-143. ISBN 978-1-4833-7548-9

Metzger, M. J., & Flanagin, A. J., (2013). Credibility and trust of information in online environments: The use of cognitive heuristics. Journal of Pragmatics, 59(Pt B), 210–220. https://doi.org/10.1016/j.pragma.2013.07.012

Mitroff, I. I., Shrivastava, P., & Udwadia, F. E., (1987). Effective Crisis Management. The Academy of Management Executive (1987-1989), 1(4), 283–292. http://www.jstor.org/stable/4164770

Murray CJL., (2022). COVID-19 will continue but the end of the pandemic is near. Lancet. 2022;399(22):S0140-S6736. doi:10.1016/S0140- 6736(22)00100-3

Nardi, P.M., (2018) Doing Survey Research: A Guide to Quantitative Methods. Chapter 1. 4th Edition. Routledge, Taylor & Francis Group, 1–24.

Ndwandwe, D., & Wiysonge, C., (2021). COVID-19 vaccines. Current Opinion in Immunology. Volume 71: 111-116. https://doi.org/10.1016/j.coi.2021.07.003

Neubaum, G., Rösner, L., Rosenthal-von der Pütten, A., Krämer, N. (2014). Psychosocial functions of social media usage in a disaster situation: A multi-methodological approach. Computers in Human Behavior. 34. 28–38. 10.1016/j.chb.2014.01.021.

Neumann-Böhme, S., Varghese, N. E., Sabat, I., Barros, P. P., Brouwer, W. B. F., van Exel, J., Schreyögg, J., & Stargardt, T., (2020). Once we have it, will we use it? A European survey on willingness to be vaccinated against COVID-19. European Journal Of Health Economics, 21(7), 977-982.

Northouse, P. G., (1997). Leadership: Theory and practice. Sage Publications, Inc.

Oliver-Smith., (1999) "What is a disaster?": Anthropological perspectives on a persistent question. The Angry Earth, 1st edition. Routledge.

Ophir Y., (2018). Coverage of epidemics in American newspapers through the lens of the crisis and emergency risk communication framework. Health Secur, 16:147–57.

Palen, L., S. Vieweg, J. Sutton, S.B. Liu & A. Hughes., (2007). Crisis Informatics: Studying Crisis in a Networked World. Third International Conference on e-Social Science, Ann Arbor, Michigan, October 7-9, 2007.

Pauchant, T. C., & Mitroff, I. I., (1992). Transforming the crisis-prone organization. San Francisco: CA: Jossey-Bass Publishers.

Paraskevas, A., (2006) "Crisis Management or Crisis Response System? A complexity science approach to organizational crises." Management Decision, 44/7, pp-892-907.

Parker, C ., Scott, S.; Geddes, A., (2019). *Snowball Sampling.* SAGE Research Methods Foundations. doi:10.4135/

Pearson, M. C & Clair, J. A., (1998) "Reframing Crisis Management." Academy of Management Review, No.1, pp. 59-76.

Pearson, M. C & Mitroff, I.I., (1993) "From Crisis Prone to Crisis Prepared – A Framework for Crisis Management Definition of Crisis Management." Academy of Management Executive, No.1. pp-48-59.

Penrose, M, J., (2000) The Role of Perception in Crisis Planning. Public Relations Review, 26 (2): 155-171. Published by Elsevier Science Inc.

Perma.cc record., (2020) Public Health, England: The Health Protection (Coronavirus) Regulation 2020. England, UK: Secretary of State, UK. Government, 1-11.

Pheng, L. Heng & Ann, Y. D., (1997) “Crisis Management – A Survey of Property Development Firms.” Property Management, No.3, pp. 231-251.

Pillai, R., & Meindl, J. R., (1998). Context and charisma: A “meso” level examination of the relationship of organic structure, collectivism, and crisis to charismatic leadership. Journal of Management, 24, 643-671.

Pollard, D., & Hotho, S., (2006) “Crises, Scenarios and the Strategic Management Process.” Management Decisions, No.6, pp. 721-736.

Ponto J., (2015). Understanding and Evaluating Survey Research. J Adv Pract Oncol. 2015 Mar-Apr;6(2):168-71. PMID: 26649250; PMCID: PMC4601897.

Pornpitakpan, C., (2004). The persuasiveness of source credibility: A critical review of five Decades’ evidence. Journal of Applied Social Psychology, 34, 243–281.

Quarantelli, E. L., (1986). Disaster crisis management. Paper presented at the International Conference on Industrial Crisis Management in New York City, New York.

Quinn P., (2018) Crisis communication in public health emergencies: the limits of ‘legal control’ and the risks for harmful outcomes in a digital age. Life Sci Soc Policy; 14:4.

Ramo, J., (2015). Instagram para empresas. Espanha: Smashwords Edition.

Ribeiro, P., (2021). A COVID-19 e a DGS no Facebook: analisando a Saúde em imagens e texto escrito. 10. 55. 10.25768/21.04.04.10.06.

Robert, B., & Lajtha, C., (2002). A new approach to crisis management. Journal of Contingencies and Crisis Management, 10(4), 181-191.

Rosi, A., *et al.,* (2021). Risk Perception in a Real-World Situation (COVID-19): How It Changes From 18 to 87 Years Old. Frontiers in Psychology Vol.12 DOI=10.3389/fpsyg.2021.646558 ISSN=1664-1078

Ruão, T., (2013). Estratégias de comunicação na saúde – Na promoção da igualdade. In F. Lopes, T. Ruão, S. Marinho, Z. P. Coelho, L. Fernandes, R. Araújo & S. Gomes (Eds.), A Saúde em Notícia: Repensado Práticas de Comu- nicação (pp. 16–26). CECS. http://www.cecs.uminho.pt/publicacao/a-saude-em-noticia-repensando-praticas-de- -comunicacao/

Salant, P., & Dillman, D. A., (1994). How to Conduct Your Own Survey. New York: Wiley

Santaella, L., (2007). As linguagens como antídotos ao midiacentrismo. Matrizes, 1(1), 75-97. https://doi. org/10.11606/issn.1982-8160.v1i1p75-97

Santos, Clara A.; Magalhães, Olga E.; Burnay, Catarina D.; Araújo, Rita., (2021). The COVID-19 vaccination agenda. European and portuguese official sources' performance in facebook, Instagram, Twitter and Linkedin. Thematic dossier International Relations and Social Networks. https://doi.org/10.26619/1647- 7251.DT21.11

Sawalha, I. H. S., Jraisat, L. E., & Al-Qudah, K. A., (2013). Crisis and disaster management in Jordanian hotels: practices and cultural considerations. Disaster Prevention and Management, 22(3), 210-228.

Schultz, F., Utz, S., & Goritz, A., (2011). Is the medium the message? Perceptions of and reactions to crisis communication via twitter, blogs and traditional media. Public Relations Review 37, 20.27. Published by Elsevier Inc.

Schoemaker, P.J.H., (1993). Multiple Scenario Development: Its Conceptual and Behavioral Foundation. Strategic Management Journal, 14(3), pp. 193-213. https://doi.org/10.1002/smj.4250140304

Seddighi H., (2020). COVID-19 as a Natural Disaster: Focusing on Exposure and Vulnerability for Response. Disaster Med Public Health Prep. 2020 Aug;14(4):e42-e43. doi:10.1017/dmp.2020.279

Seeger, M. W., Sellnow, T. L., & Ulmer, R. R., (1998). Communication, organization, and crisis. In M. E. Roloff (Ed.), Communication yearbook, 21 (pp. 231-276). Thousand Oaks, CA: Sage.

Sesagiri, R.A, Tan SG, Wee HL., (2020). Measuring the Outreach Efforts of Public Health Authorities and the Public Response on Facebook During the COVID-19 Pandemic in Early 2020: Cross-Country Comparison
J Med Internet Res 2020;22(5): e19334

Shaluf, I. M., Ahmadun, F., & Said, A. M., (2003). A review of disaster and crisis. Disaster Prevention and Management, 12(1), 24-32.

Shamir, B., House, R. J., & Arthur, M. B., (1993). The motivational effects of charismatic leadership: A self-concept based theory. *Organization Science, 4*(4), 577–594. https://doi.org/10.1287/orsc.4.4.577

Shamir, B., & Howell, J. M., (1999). Organizational and contextual influences on the emergence and effectiveness of charismatic leadership. The Leadership Quarterly, 10, 257-283.

Shrivastava, P., & Mitroff, I.I., (1987). "Strategic Management of Corporate Crisis." Columbia Journal of World Buiness, No.1, pp. 5-11

Stephenson, P., (2013). Twenty years of multi-level governance: "Where Does It Come From? What Is It? Where Is It Going?". J. Eur. Public Policy, 20, 817–837.

Spillan, J.E., (2000). Strategies for Successful Crisis Management [online]. Available at: http://webapps.roanoke.edu/businessweb/SEINFORMS%202008%20-%20Proceedings/ proc/p080429001.pdf

Slovic, P., (1987). Perception of Risk. Science. 236. 280-285. Doi: 10.1126/science.3563507.

Slovic, P., Weber, U.E., (2002). Perception of Risk posed by extreme events. Conference Risk Management strategies in an Uncertain World," Palisades, New York, April 12-13.

Sjöberg, L., & Engelberg, E., (2005). Lifestyles, and Risk Perception Consumer Behavior, International Review of Sociology, 15:2, 327-362, DOI: 10.1080/03906700500159755

Sturges, D.L., (1994). 'Communicating through crisis: A strategy for organizational survival', *Management Communication Quarterly*, 7, 297–316.

Tavilani, A., Abbasi, E., Ara, K., Darini,A., Asefy, Z., (2021). COVID-19 vaccines: Current evidence and considerations. Metabolism Open. Volume 12. https://doi.org/10.1016/j.metop.2021.100124

Taylor, M & Perry, C.D., (2005). Diffusion of traditional and new media tactis in crisis communication. Public Relations Review 31, 209-217. Published by Elsevier Science Inc.

Teixeira, P. M., Vital Brito, D., Araújo, R., & Gomes, B., (2021). Risk Communication and Community Engagement in the COVID-19 Pandemic in Portugal. Acta Médica Portuguesa, 34(1), 1–2. https://doi.org/10.20344/amp.15145

Tian, Y., & Yang, J., (2022). Deny or bolster? A comparative study of crisis communication strategies between Trump and Cuomo in COVID-19, Public Relations Review, Volume 48, Issue 2, ISSN 0363-8111. https://doi.org/10.1016/j.pubrev.2022.102182

Turner, Barry A. & Pidgeon, Nick F., (1997). *Man-made disasters*. Boston : Butterworth-Heinemann

Ulmer, R. R., Sellnow, T. L., & Seeger, M. W., (2014). Effective crisis communication: Moving from crisis to opportunity (3rd ed.). Thousand Oaks, CA: SAGE.

Utz, S., Schultz, F., & Glocka, S., (2013). Crisis communication online: How medium, crisis type and emotions affected public reactions in the Fukushima Daiichi nuclear disaster. Public Relations Review, 39, 40–46. doi:10.1016/j. pubrev.2012.09.010

Vasickova, V., (2020). Crisis Management Process - A Literature Review and a Conceptual Integration. Acta Oeconomica Pragensia. 27. 61-77. 10.18267/j.aop.628.

Y. Cheng., (2016). How social media is changing crisis communication strategies: Evidence from updated literature, Journal of Contingencies and Crisis Management 26 (1). https://doi.org/10.1111/1468-5973.12130.

Yin, R. K., (2009). Case Study Research: Design and Methods (4th ed.) Thousand Oaks, CA: Sage Publications.

Young, K., (2016). Understanding publics' perception and behaviors in crisis communication: Effects of crisis news framing and publics' acquisition, selection, and transmission of information in crisis situations, Journal of Public Relations Research, 28:1, 35-50, DOI: 10.1080/1062726X.2015.1131697

Yukl, G. A., (1998). Leadership in organizations (4th ed.). Englewood Cliffs, NJ: Prentice Hall.

Wardle, C., Derakhshan, H., (2017). Information Disorder. Strasbourg: Council of Europe.

Weber, M., (1947). The theory of social and economic organization (T. Parsons, Trans.). New York: Free Press.

Wright, R.; Stein, M., (2005). Snowball Sampling. Encyclopedia of Social Measurement. Elsevie, Pages 495-500. ISBN 9780123693983. https://doi.org/10.1016/B0-12-369398-5/00087-6.

Wu, F. et al., (2020). Author Correction: a new coronavirus associated with human respiratory

Zarocostas, J., (2020). How to fight an infodemic. The Lancet, 395 (10225), 676.

Zhang W, Creswell J., (2013). The use of "mixing" procedure of mixed methods in health services research. Med Care. 51-7. doi: 10.1097/MLR.0b013e31824642fd. PMID: 23860333.

**Web References:**

APDH Portugal (2021) Sessão sobre Comunicação Risco e Emergência. Youtube. Available at: https://www.youtube.com/watch?v=8cLTAGznhSgv (Accessed: 12 November, 2022)

Aljazeera. (2020a) China Coronavirus Outbreak: AL the Latest Updates. Available at: https://www.aljazeera.com/news/ 2020/02/cloneofcloneofcloneofcloneofcloneof200215224 4372-200220231446112.html.

Branswell H. (2020) WHO Says Coronavirus Is Not Yet a Pandemic But Urges Countries to Prepare. Available at: https://www.scientificamerican.com/article/who-says-coro navirus-is-not-yet-a-pandemic-but-urges-countries-to-pre- pare/. (Accessed: November, 2022)

Brito, A., (2020) O vice-almirante Gouveia e Melo e a liderança. Observador.Available at: https://observador.pt/opiniao/o-vice-almirante-gouveia-e-melo-e-a-lideranca/ (Accessed in: September, 10, 2022)

Bryner J. (2020) 1st Known Case of Coronavirus Traced Back to November in China. Available at: https://www.livescience. com/first-case-coronavirus-found.html. (Accessed: December 15, 2022)

Cardoso, J (2020) - Com parte do país em casa, as audiências da televisão portuguesa são históricas. Jornal Público. Available at: https://www.publico.pt/2020/03/17/culturaipsilon/noticia/parte-pais-casa-audiencias-televisao-portuguesa-sao-historicas-1908209 (Accessed: 19 November, 2022)

Davis A. (2021). COVID-19: when do experts predict life will return to normal? Accessed on November 28, 2022. https://patient.info/ news-and-features/covid-19-when-do-experts-predict-life-will- return-to-normal (Accessed: December 27, 2022)

Decreto de Lei - Resolução da Assembleia da República (18 de Março, 2020) https://files.dre.pt/1s/2020/03/05503/0000500007.pdf (Accessed: December 1, 2022)

DGS - Plano Nacional de Preparação e Resposta à Doença por novo coronavírus (2020) Available at: https://www.dgs.pt/documentos-e-publicacoes/plano-nacional-de-preparacao-e-resposta-para-a-doenca-por-novo-coronavirus-covid-19-pdf.aspx

Dimock, M (2018). Defining generations: Where Millennials end and Generation Z begins. Available at: https://www.pewresearch.org/fact-tank/2019/01/17/where-millennials-end-and-generation-z-begins/ (Accessed: September 7, 2021)

ECO (2021) Governo admite que a app StayAway Covid não funcionou em Portugal, Available at: https://eco.sapo.pt/2021/05/12/governo-admite-que-app-stayaway-covid-nao-funcionou/ (Accessed: December 20, 2022)

eMarketer (2020) Global Instagram Users 2020: The Pandemic Propels Worldwide User Base to 1.00 Billion for the First Time, Available at: https://www.insiderintelligence.com/content/global-instagram-users-2020 (Accessed: December 20, 2020)

Faustino, A (2021) Gouveia e Melo eleito Personalidade do Ano. Available at: https://www.cision.pt/recursos/artigos/gouveia-e-melo-eleito-personalidade-do-ano/ (Accessed: August 10, 2022)

Freitas, Graça (2020, January, 15th). "Não há grande possibilidade de chegar um vírus destes a Portugal". https://tvi.iol.pt/programa/ana-leal/5bec51560cf26bfdcaedf1f9/videos/--/--/video/5e1f27450cf2f02ca42d0155

Gabinete do Primeiro-Ministro (2020) Informação à Comunicação Social. Available at: PortugalGov (Accessed: 25 October, 2022)

Goh, B. (2020, January, 11th). Morre homem infetado em surto de vírus misterioso na China. Reuters. https://www.reuters.com/article/china-virus-morte-idLTAKBN1ZA0SN

Juan D. (2020) Wuhan Wet Market Closes Amid Pneumonia Outbreak. Available at: https://www.chinadaily.com.cn/a/ 202001/01/WS5e0c6a49a310cf3e35581e30.html.

Kindred and Hawken (2020) MORE than 41million people and at least 14 cities are on lockdown as the Chinese government shut major tourist attractions amid the deadly coronavirus outbreak. Available at: https://www.thesun.ie/news/5019104/coronavirus-third-chinese-city-placed-on-lockdown-as-experts-warn-killer-bug-nearly-impossible-to-contain/ (Accessed: December 18, 2022)

LeaderMagazine (2020) Liderança é um ato de exemplo, proximidade e camaradagem", vice-almirante Gouveia e Melo no encerramento da Leadership Summit Portugal. Available at:https://lidermagazine.sapo.pt/lideranca-e-um-ato-de-exemplo-proximidade-e-camaradagem-vice-almirante-gouveia-e-melo-no-encerramento-da-leadership-summit-portugal/ (Accessed: 29 October, 2022)

Ma J. (2020) Coronavirus: China's First Confirmed Covid-19 Case Traced Back to November 17. Available at: https:// www.scmp.com/news/china/society/article/3074991/coro navirus-chinas-first-confirmed-covid-19-case-traced-back. (Accessed: 10 October,2 022)

Marketeer (2020). Pivots da RTP, SIC, TVI e CMTV juntos a uma só voz contra o COVID-19. Available at: https://marketeer.sapo.pt/pivots-da-rtp-sic-tvi-e-cmtv-junto-a-uma-so-voz-contra-o-covid-19/

Marktest (2020) Cobertura Noticiosa. Available at: https://www.marktest.com/wap/a/n/id~261f.aspx (Accessed: 19 November, 2022)

Por Data (2022), "População residente, estimativas a 31 de dezembro: total e por grupo etário", Available at: https://www.pordata.pt/db/portugal/ambiente+de+consulta/grafico (Accessed: December 18, 2022)

Ravelo JL and Jerving S. (2020) COVID-19 e a Timeline of the Coronavirus Outbreak. Available at: https://www.devex.com/news/ covid-19-a-timeline-of-the-coronavirus-outbreak-96396. (Accessed: 12 October, 2022)

Sim W. (2020) Japan Confirms First Case of Infection From Wuhan Coronavirus; Vietnam Quarantines Two Tourists. Available at: https://www.straitstimes.com/asia/east-asia/japan-confirms-fi rst-case-of-infection-with-new-china-coronavirus. (Accessed: 10 October, 2022)

Schnirring L. (2020) China Release Genetic Data on New Coronavirus, Now Deadly. Available at: https://www.cidrap.umn. edu/news-perspective/2020/01/china-releases-genetic-data- new-coronavirus-now-deadly. (Accessed: 10 October, 2022)

SNS (2020) StayAway Covid. Available at: https://www.sns.gov.pt/apps/stayaway-covid/. (Accessed: December 18, 2022)

The World Bank. (2020a) Statement on the Novel Coronavirus in China Available at: https://www.worldbank.org/en/news/ statement/2020/02/03/statement-on-the-novel-coronavirus- in-china-february-3-2020. (Accessed: December 18, 2022)

WHO. (2020a) Statement regarding cluster of pneumonia cases in Wuhan, China. Available at: https://bit.ly/3gHKTJk (Accessed: December 9, 2022)

WHO. (2020b) WHO Timeline e COVID-19. Available at: https://www.who.int/news-room/detail/08-04-2020-who- timeline—covid-19. (Accessed: December 9, 2022)

WHO. (2020c) Coronavirus Disease 2019 (COVID-19): Situation Report -41. Available at: https://www.who.int/docs/ default-source/coronaviruse/situation-reports/20200301- sitrep-41-covid-19.pdf?sfvrsn1⁄46768306d_2. (Accessed: December 9, 2022)

## ATTACHMENTS

## APPENDIX 1 - SURVEY STRUCTURE

# A Eficácia da Estratégia de Comunicação das Autoridades Portuguesas para Combater a Pandemia Covid-19.

Apresentação do Estudo e Consentimento Informado:

O presente inquérito por questionário realiza-se no âmbito da dissertação final do Mestrado em *Communication Studies*, na vertente *Communication, Marketing* and *Advertising* na Faculdade de Ciências Humanas da Universidade Católica Portuguesa.

Este inquérito pretende compreender a opinião dos Millennials (nascidos entre 1981 e 1996) e da Geração Z (nascidos entre 1997 e 2012) sobre a eficácia da Estratégia de Comunicação das Autoridades Portuguesas no Combate à Covid-19.

Se pertence a umas destas gerações e reside(ia) em Portugal durante os dois anos iniciais da Pandemia Covid-19, é elegível para participar neste estudo.

O inquérito tem 4 grupos temáticos e um total de 24 questões e responde-se em aproximadamente 5-10 minutos.

Face à natureza deste estudo, a obtenção de respostas sinceras e objetivas é apreciada, pelo que não há respostas certas ou erradas. Todos os dados recolhidos serão utilizados exclusivamente para fins académicos e tratados em confidencialidade e anonimato.

Agradeço a sua colaboração!

Caso tenha alguma dúvida, contacte-me através do e-mail: mariainesfvdamasio@gmail.com

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Mudar de conta

Seguinte

Página 1 de 5

Limpar formulário

Secção 2 de 5

## Fontes de Informação sobre a Covid-19

Esta secção do questionário pretende compreender onde o inquirido se baseou para obter informações sobre a Covid-19, como por exemplo, a evolução da Covid-19 em Portugal, características do vírus e/ou situação mundial.

1. No início da pandemia Covid-19, quais as fontes a que recorreu para obter informações sobre o novo vírus? *

- [ ] Amigos/Familiares
- [ ] Direção-Geral de Saúde (DGS)
- [ ] Facebook
- [ ] Governo
- [ ] Instagram
- [ ] Jornais nacionais digitais
- [ ] Jornais internacionais digitais
- [ ] Organização Mundial da Saúde (OMS)
- [ ] Rádio
- [ ] Televisão
- [ ] Youtube
- [ ] Website DGS/Ministério da Saúde
- [ ] Outra opção...

2. Das fontes por si indicadas para obter informação sobre a Covid-19, qual a que recorreu com maior regularidade? *

- ◯ Amigos/Familiares
- ◯ Direção-Geral de Saúde (DGS)
- ◯ Facebook
- ◯ Governo
- ◯ Instagram
- ◯ Jornais nacionais digitais
- ◯ Jornais internacionais digitais
- ◯ Organização Mundial da Saúde (OMS)
- ◯ Rádio
- ◯ Televisão
- ◯ Youtube
- ◯ Website DGS/Ministério da Saúde
- ◯ Outra opção...

3. Com que periodicidade utilizou essas fontes de informação? *

1. Diariamente: 1 a 5 dias vezes por dia
2. Diariamente: 5 a 10 vezes por dia
3. Diariamente: Mais de 10 vezes por dia
4. Semanalmente: 1 vez por semana
5. Semanalmente: 2 a 3 vezes por semana
6. Semanalmente: 4 ou mais vezes por semana
7. Mensalmente: 1 vez por mês
8. Mensalmente: Quinzenalmente
9. Mensalmente: 4 ou mais vezes por mês

4. Ao pesquisar mais informações referentes à infeção por Covid-19 nas redes sociais, como o Twitter, Instagram e Facebook, detetou informações falsas? *

- ◯ Sim
- ◯ Não

Secção 3 de 5

Confiança, Transparência e Eficácia na Estratégia de Comunicação do Governo e das Autoridades de Saúde

A segunda parte do questionário destina-se à análise da perceção sobre a eficácia da estratégia de comunicação realizada por parte do Governo e das Autoridades de Saúde para controlo da pandemia Covid-19, em Portugal, durante os dois anos iniciais (2020 e 2021).

1. Considera que as fontes de informação disponíveis foram suficientes para se manter informado(a) sobre/para: *

| | Sim | Não |
|---|---|---|
| Situação/Evolução da pan... | ◯ | ◯ |
| Medidas/Cuidados a tom... | ◯ | ◯ |
| Saber como proceder em ... | ◯ | ◯ |
| Saber onde recorrer/com... | ◯ | ◯ |
| Lidar com questões admi... | ◯ | ◯ |

1.1. Descreva brevemente (se aplicável) outras medidas/dados que as fontes de informação lhe transmitiram que não estejam referenciadas acima.

Texto de resposta longa

2. Ao pesquisar mais informações referentes à infeção por Covid-19 em plataformas disponibilizadas pelo Governo e DGS considera que as informações disponibilizadas foram: *

- ○ Úteis e suficientes
- ○ Úteis, mas insuficientes
- ○ Confusas e insuficientes
- ○ Outra opção...

3. De acordo com a sua opinião sobre a comunicação do Governo e da DGS, classifique as seguintes afirmações. (Considere: 1 - discordo totalmente a 5 concordo totalmente) *

| | 1 - Discordo... | 2 - Discordo... | Não discor... | 4 - Concord... | 5 - Concord... |
|---|---|---|---|---|---|
| O Governo ... | ○ | ○ | ○ | ○ | ○ |
| O Governo ... | ○ | ○ | ○ | ○ | ○ |
| O Governo ... | ○ | ○ | ○ | ○ | ○ |
| A transmis... | ○ | ○ | ○ | ○ | ○ |
| As conferê... | ○ | ○ | ○ | ○ | ○ |
| Durante a p... | ○ | ○ | ○ | ○ | ○ |
| O Governo ... | ○ | ○ | ○ | ○ | ○ |

3.1. Dispõe de outra opinião sobre a comunicação do Governo e DGS que não esteja descrita acima? Se sim, qual?

Texto de resposta longa

4. Na sua opinião, qual a prioridade do Governo e da DGS durante a pandemia Covid-19? *

- ○ A proteção da saúde pública e da população portuguesa
- ○ A salvaguarda da economia do país
- ○ Ambas as opções
- ○ Nenhuma das opções
- ○ Outra opção...

5. Quais das seguintes estratégias de comunicação implementadas pelo Governo e DGS, conhece/viu? *

- ☐ Somos todos uma voz (Campanha da DGS em parceria com os pivots da CMTV, RTP,...
- ☐ App StayAway Covid
- ☐ Conferências diárias sobre o quadro epidemiológico português
- ☐ Website da DGS, exclusivamente criado para a Covid-19
- ☐ Anúncios Televisivos
- ☐ Redes Sociais da DGS (Twitter, Instagram e Facebook) com conteúdos informativos
- ☐ Outra opção...

Secção 4 de 5

Adesão às Medidas de Mitigação da Covid-19

A seguintes questões pretendem compreender se o grau de confiança do inquirido no Governo influenciou a adesão às medidas de mitigação da Covid-19.

1. Tendo em consideração a estratégia de comunicação implementada ao longo de 2020 e 2021 pelo Governo e DGS sentiu-se de alguma forma influenciado(a) a cumprir com as medidas de mitigação da Covid-19? *

- ◯ Sim, mas apenas em 2020 (na primeira fase da pandemia)
- ◯ Sim, durante todo o decurso da pandemia
- ◯ Parcialmente
- ◯ Não

2. Se respondeu "Não" na questão anterior, explique por que motivo/os não se sentiu influenciado(a).

Texto de resposta longa

3. Das medidas implementadas pelo Governo e DGS, quais adotou no seu quotidiano durante o decurso da pandemia por Covid-19? *
(Considere 1 - nunca adotei e 5 - adotei totalmente)

| | 1 - Nunca a... | 2 - Rarame... | 3 - Adotei q... | 4 - Adotei n... | 5 - Adotei t... |
|---|---|---|---|---|---|
| Confiname... | ◯ | ◯ | ◯ | ◯ | ◯ |
| Saídas estri... | ◯ | ◯ | ◯ | ◯ | ◯ |
| Passeios hi... | ◯ | ◯ | ◯ | ◯ | ◯ |
| Medidas de... | ◯ | ◯ | ◯ | ◯ | ◯ |
| Utilização d... | ◯ | ◯ | ◯ | ◯ | ◯ |
| Utilização d... | ◯ | ◯ | ◯ | ◯ | ◯ |
| Distanciam... | ◯ | ◯ | ◯ | ◯ | ◯ |

3.1. Se selecionou "Nunca adotei" nas 7 medidas implementadas pelo Governo/DGS explique porquê.

Texto de resposta longa

4. Considere a confiança que manteve no Governo e na DGS durante a pandemia por Covid-19 e classifique as seguintes afirmações. (Sendo que 1- discordo totalmente e 5 - concordo totalmente) *

| | 1 - Discordo... | 2 - Discordo... | 3 - Não disc... | 4 - Concord... | 5 - Concord... |
|---|---|---|---|---|---|
| Considero ... | ○ | ○ | ○ | ○ | ○ |
| Considero ... | ○ | ○ | ○ | ○ | ○ |
| Considero ... | ○ | ○ | ○ | ○ | ○ |

5. Considera que o seu grau de confiança no Governo e DGS condicionou a sua predisposição para seguir as medidas recomendadas de controlo da pandemia? *

- ○ Sim
- ○ Não

6. Caso tenha respondido "Sim" na questão anterior, indique em que entidades depositou a sua confiança durante a Pandemia Covid-19.

- ☐ Organização Mundial de Saúde (OMS)
- ☐ Profissionais de saúde especializados
- ☐ Meios de Comunicação televisiva e jornalística
- ☐ Redes Sociais
- ☐ Outra: _____

7. Classifique as seguintes afirmações. (Considere que 1 - discordo totalmente e 5 - concordo totalmente) *

| | 1 - Discordo... | 2- Discordo ... | 3- Não con... | 4- Concord... | 5- Concord... |
|---|---|---|---|---|---|
| A estratégi... | ○ | ○ | ○ | ○ | ○ |
| A utilização... | ○ | ○ | ○ | ○ | ○ |
| A populaçã... | ○ | ○ | ○ | ○ | ○ |

Secção 5 de 5

Caracterização Sociodemográfica

Preencha, por favor, alguns dados (confidenciais) sobre si:

1. Que idade tem? *

- ○ 18 - 25 anos (Geração Z)
- ○ 26 - 32 anos (Geração Millennials)
- ○ 33 - 40 anos (Geração Millennials)

3. Qual é a sua zona de residência? *

- ○ Norte
- ○ Grande Porto
- ○ Zona Centro
- ○ Grande Lisboa
- ○ Alentejo
- ○ Algarve
- ○ Regiões Autónomas

4. Quais as suas habilitações académicas? *

- ◯ Ensino Secundário
- ◯ Licenciatura
- ◯ Mestrado
- ◯ Doutoramento
- ◯ Outra opção...

5. Qual é o seu rendimento mensal bruto? *

- ◯ Menos de 1000 €
- ◯ De 1000 a 2000 €
- ◯ De 2000 a 3000 €
- ◯ Mais de 3000 €
- ◯ Não recebo um salário

## APPENDIX 2

## DGS social networks' - Instagram & Facebook


Image 5 | Covid-19 posts on DGS's Instagram


Image 6 | Covid-19 posts on DGS's Instagram


Image 7 | Covid-19 posts on DGS's Instagram


Image 8 | Covid-19 posts on DGS's Instagram

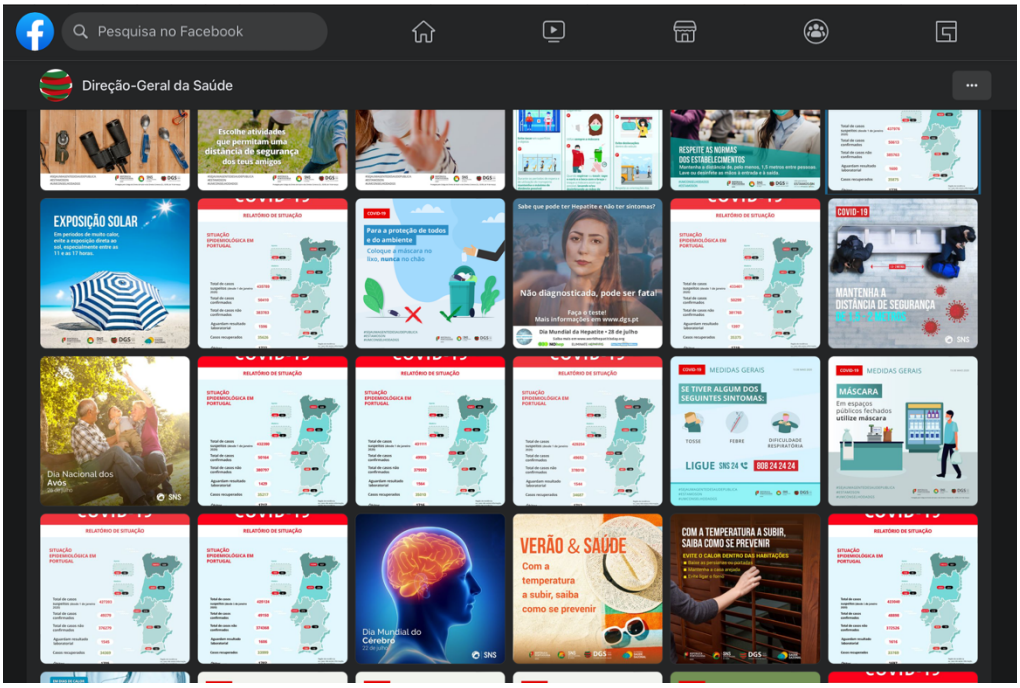


Image 9 | DGS's Facebook page

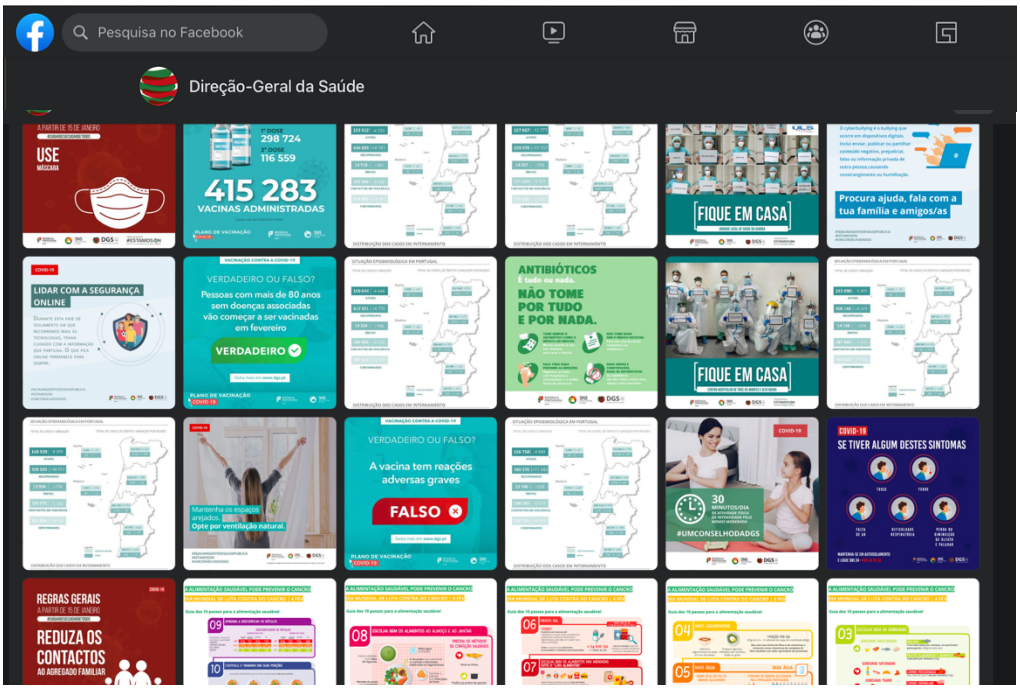


Image 10 | DGS's Facebook page


Image 11 | Covid-19 posts on DGS's Facebook


Image 12 | Covid-19 posts on DGS's Facebook