



VEPRE. A Mixed-Method Approach for Including Sociological Profiles in Audience Segmentation for Communication Campaigns

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Abstract

The VEPRe model aims at providing practical recommendations in times of crises through a mixed-method approach for audience segmentation leading to the creation of sociological profiles. The model inherits from theoretical models in audience segmentation from the distinct disciplines of marketing, psychology, sociology, linguistics, and anthropology. We propose a model divided into four main dimensions: values, emotions, practices, and relations to the norm. This model, whose approach is deliberately empirical, is an answer to the limits of entirely statistical approaches that occasionally overlook some individuals, their systemic properties, and their complexity. In this model, audience segmentation is predictive as it aims to define levers of action for each persona that lead to conversion, empowerment, a mind-shift, higher trust, role-modeling, or a better understanding of a given situation. The VEPRe method is inclusive (it allows individuals to belong to several groups) and flexible (it evolves over time and opens the way to the evolution and change of individuals). This grouping method also encourages the completion and mutual support between segments; it is a peer-supporting method.

Keywords: Audience Segmentation; Sociological Profiles; Mixed-Method; High-Risk Communication; Empowerment

Introduction

Two main types of approaches to the sociology of risk have been evolving since the 1980s. Many authors have focused on a particular risk (for example, AIDS or extreme sports) while others take a global approach to risk. The latter differs from the former in that authors study risk as part of a broader examination of contemporary societies [1]. Douglas stated that an individual's perception of risk is influenced by their cultural context and own knowledge of risk [2,3]. Following this theory, the social construction of risk is also influenced by the individual's identity and emotional threshold. In other words, each individual has a personal perception of what they consider a risk. For example, for some people, smoking a cigarette is a major risk, while for others, it is not. Douglas's approach was then elaborated by Wilkinson [3], who put forward the idea that media influence should be added to the cultural approach. In the 1990s, the media developed a growing interest in risk. This particular attention to risk led to a greater input of information about risk than before; awareness of risk, like risk itself, became omnipresent.

This mediatisation had a strong impact on an individual's perception and capacity to react. Such is the observation during recent crises regarding, for instance, migration, Covid-19, and energy). The over-mediatisation of crises has led to the emergence of misinformation, such as filter bubbles, fake news, and an infodemic. Misinformation has increasingly been studied during the Covid-19 [4,5] because the crisis "has contributed even more to the surrounding hysteria" [5,6]. These studies have highlighted the damage caused by "a huge and incessant flow of true and false information, hard to manage for individuals" [4]. Misinformation may cause anxiety, misunderstanding and information overload [7,8] depending on the profile of the individual exposed. Consequently, there is an urgent need in crisis contexts to adapt communication to each of the realities and perceptions individuals have of the crisis, and this should be done without following the usual algorithms that only focus on online practices and prevent individuals from becoming empowered by confining them within a communication bubble.

Opinion surveys are often used to capture the variation in the population's profile and of the various attitudes and understanding of communication campaigns, "certain types of messages may be enthusiastically embraced by some members of the general public but elicit indifference or outrage from others" [9]. This led to the popularization of the concept and method of audience segmentation in the 1950s in the framework of mass communication studies [10,11] and market sciences [12]. According to McQuail [13], audiences are "both a product of social context and a response to a particular pattern of media provision". Audience segmentation has been studied in social sciences and user-centered design to adapt (mass) communication campaigns to the variety of profiles, targeting certain segments to serve advertising or policy makers' communication strategies. Later, there was a change in the study of audience segmentation: individuals became "passive spectators to active and selective" ones [14] because the objectives of the campaigns changed based on the prediction of public engagement [15].

Classical methods for population segmentation based on survey-based opinion polling include hierarchical clustering and latent class analysis, which are popularized statistical methods for multiple correspondence analysis. They give pertinent and documented results concerning population groups commonly identified as segments, audiences, or personas. However, these methods have limitations: (a) with these methods, the cluster size is often out-of-control; (b) these methods consider all variables equally, and the variables are rarely customizable; and (c) they do not build on human intuitions or the needs emanating from the field.

In this study, we present a theoretical and methodological model called VEPRe, which stands for its 4 main dimensions: Values, Emotions, Practices and Relation to the norm. VEPRe was developed over the last few years in response to a series of needs from scientific institutions, public authorities, and the media to better communicate with the population in crisis contexts. Although the model can work in some non-crisis situations, risk and crisis management has accelerated the need to identify and communicate with fragile segments and invisible groups of people: "as the risks [...] have become increasingly well documented, the urgency of engaging the public around these risks has grown" [16]. The VEPRe model first emerged in reaction to the 2015 migrant crisis and then adapted to the 2020 Covid-19 crisis. It was formalized in response to the flooding disasters and the Belgian public authority's need for segmentation of the Belgian youth for climate change communication. Although the model has already been applied in various situations and projects [17,18,19], this paper is the first one that formalizes its principles.

VEPRe is a theoretical model based on a mixed qualitative and quantitative analysis of survey and interview results. This model, whose approach is deliberately empirical, is an answer to the limits of entirely statistical approaches that occasionally overlook

some individuals, their systemic properties, and their complexity. In this model, audience segmentation is predictive as it aims to define levers of action for each persona that lead to conversion, empowerment, a mind-shift, higher trust, role-modeling, or a better understanding of a given situation. The VEPRe model adopts the "personas" label as described by D'Onofrio [20]: identified groups are "holistic, ideological social types that are recognizably linked with ways of being and speaking".

This paper is divided into four main parts. First, the theoretical background of the model is defined, and the concepts of audience segmentation and persona in crisis contexts are examined within theoretic and historical frameworks. Then, the VEPRe model's theoretical approach and design is detailed, and the model is compared with other grouping methods. This part is also dedicated to the four main dimensions of the holistic profile underneath the model. Finally, we will present a summary of the model, consider its limitations, and reflect on possible ways to enhance the approach.

State of the Art

Audience segmentation

Audience segmentation, also known as audience fragmentation, segmented analysis, cohort analysis and subgroup analysis, is a grounded theory data analysis technique [21] that divides a data set from a selected population sample into smaller subgroups or segments to perform a specific analysis of each [15]. Each segment is typically defined based on particular characteristics or criteria (for example, beliefs, behaviors or political ideology). The overarching aim of the segmented analysis is to identify differences, trends, or patterns specific to each segment, which can lead to a deeper understanding of their behavior and how information should be communicated to them. By dividing data into segments, it is possible to develop tailored information on specific sub-groups rather than dealing with the population as a whole and hoping that everybody will access and understand the information the same way.

Why should we consider audience segmentation in communication during high-risk situations? The scientific definition of risk, "the product of the magnitude of potential damage and the probability of its occurrence" [22], varies considerably across time and disciplines. However, "people rarely perceive and process the concept of risk in that way" [22]. There is a considerable gap between how authorities perceive risk and how people understand it through the information that reaches them.

Moser notes that "mismatches between messages, messengers, and audiences can undermine the credibility and persuasiveness of [...] communications" [9,23] among a diverse group of people in high-risk situations. An inadequate communication strategy can lead to various attitudes among the population that may not be helpful during a crisis. For instance, during the Covid-19

crisis, “the proliferation of anti-vaccination arguments online [have threatened] immunization programmes” [24]. Indeed, according to the social amplification of risk framework [25], communication plays a crucial role in shaping public perceptions of risk: if communication channels magnify the severity of the crisis without providing adequate context or practical solutions, they can amplify fear and anxiety, leading to negative attitudes and hindered crisis management, and ultimately creating panic among individuals [26,27]. In this situation, the population may become anxious and confused and make irrational decisions due to a lack of reliable information, as was the case during the Covid-19 crisis [4]. Other authors [28] also point out that miscommunication can disproportionately affect vulnerable and marginalized groups due to language barriers, technological disparities, and other inequalities.

During crisis management by authorities, audience segmentation can help to rapidly foster rational decision-making. However, a segmentation based on demographics such as gender, age or geography alone is incomplete [29]. For this reason, social and behavioral researchers have worked on the identification of factors that can explain the diversity of message interpretations, highlighting, for instance, in this diversity, the roles of education [30] and “various underlying social and psychological factors of individuals in interaction with communication processes” [22]. Unfortunately, the conclusions available do not sufficiently help to understand the variety of behaviours or enhance communication strategies. Audience segmentation attempts to embrace multiple factors of individual profiles to fill this gap. The methodology of audience segmentation is usually defined in three steps [30]: (1) the population is identified as diverse, (2) data about the population is collected through a sample, and (3) population segments are identified through statistical modelling.

Various models of audience segmentation have emerged in response to different communication needs as well as very different high-risk and crisis situations: climate crisis [9,30,31], health crisis [24,32,33,34], refugee crisis [34,35], energy crisis [22,36] and flooding crisis [37,38]. Among them, we focus on the following models:

- i. the Values and lifestyles program (VALS, explained in Valentine and Powers 2013) [39] has been “the only commercially available psychographic segmentation system to gain widespread acceptance”;
- ii. the Minimal effects model (explained in Gassner [14]), also known as the two-step flow of communication model of mediated influence, highlights the importance of social networks in the segmentation;
- iii. the Segmentation, targeting and positioning model (STP, explained in Dudovskiy [40]) defines population segments according to their needs and common characteristics and aims to develop products and services for them;

- iv. the Transtheoretical model [32] depicts segments based on various stages through which people progress as they initiate and maintain behavior change;

- v. the Risk perception attitude framework [33] is based on beliefs and risk perception and stipulates that, when efficacy beliefs are strong, risk perceptions are readily translated into behavior change;

- vi. the Value-system segmentation (LOV, explained in Kamakura and Novak [41]) addresses the challenge of ranking 18 values by employing a condensed roster of nine terminal values.

These models are founded on sociodemographic audience segmentation [14] alone or augmented by psychographic [39] and behavioural [32] criteria or values [41]. The main limits of these models are their low predictive power [30], lack of holistic perception of the human being, and discipline-oriented design (in marketing studies). The VEPR model precisely excludes numerous criteria inherited from these models.

Personas

The origin of creating different groups of individuals sharing common values and practices has been wrongly associated with marketing studies only. In this part, we will see how the concept of personas emerges from various disciplines.

The idea of creating a persona based on a symbol or archetype [21] of a group was first inherited from the sociological theory of ideal-types. Sociology has had an enduring tradition of conceptualising ideal-types as archetypical or prototypical segments emerging from a method consisting of “discerning from the historical forms of contemporary societies the main features, voluntarily simplified” [42]. The Weber’s definition of ideal-types reflects the archetypical individuals: it is “the intellectual construction obtained by deliberately accentuating certain features of the object under consideration” [43]. Marx, Tocqueville, Durkheim, Tönnies, Parsons and other sociologists have all consciously or intuitively employed ideotypical procedures following Weber’s definition. However, the common reference to Weber’s work hides several divergences. The ideal-type is seen in some cases as a conceptualisation procedure for social sciences or the expression of a desire to reduce complexity in social studies. In other cases, it is considered a data selection principle linked to common values or as the core of a particular method, known as “ideal-typical”, which has frequently been confused with a banal typology operation [44].

The definition of ideal-types as a value-based data selection principles is similar to some definitions of personas, but it differs from personas in the very core of its approach: the ideal-typical conceptualization creates deliberately stylised intellectual constructs or segments, described as “fictional” [45,46], a purified and simplified version of empirical reality (Rocher 1993). Ideal-types are kept at a distance from reality. Moreover, the ideal-type method determines rational behaviour and, thus, highlights all

behaviours that deviate from it [47]. On the other hand, personas are social constructs that directly derive from reality: they are data-driven groups. In addition, the selection of individuals in personas is neutral in the VEPRé model: there is no continuum between an “ideal” persona and “deviated” persona. With this vision, we avoid the danger of creating personas that will become “natural” representations of macro-social categories in an ideological process when personas come to dominate in the social imagination [48].

Although the concept of persona has historically and methodologically inherited from ideal-types, it has been gaining independence and, today, become markedly differentiated from the latter. For instance, the concept of persona, as it is considered in this paper, has gained from the study of linguistic variation [20] and linguistic anthropology (Agha 2003 and 2005; Silverstein 1976 and 2003). As we cited earlier, personas “are holistic, ideological social types that are recognizably linked with ways of being and speaking” [20]. Various aspects of the sociolinguistic definition are pertinent to us: (1) holistic: audience segmentation should consider a large number of characteristics of individuals, and not only certain aspects (as behaviours or sociodemographic traits); (2) ideology: certain values and perceptions of norms make up the core of our model; (3) social types: individuals must be considered alone and in their dynamics with others; (4) ways of being: practices are one of our four principal dimensions; and (5) ways of “sayings” [49]: there is an urgent need to listen to individuals beyond the statistics. Audience segmentation can be used to analyse discussions that are generated during interviews and focus groups.

The concept of persona used in the VEPRé model inherits from the theoretical approach of linguistic variation and anthropology and from the methods in marketing. The following sections will examine how we improve this method to create our own.

Segmentation methods

A comparison with other grouping methods provides an insight to the definition of our model and our grouping class that we called persona. In this part, we compare persona to other grouping classes, namely clusters and classes.

Two traditional statistical grouping methods for audience segmentation are latent-class analysis and clustering. The two statistical procedures differ from variable-centered approaches because they focus on similarities between individuals and not between variables. For this reason, they are considered “person-oriented analyses” [50]. Hierarchical clustering techniques aim to construct “groups in data such that observations within groups are ‘similar’ and observations from different groups are ‘dissimilar’ to one another” [51]. This heuristic approach involves “successive fusions or divisions of data until an acceptable solution is found, which is usually based on the examination of dendrograms and agglomeration schedules” [9]. Latent class analysis (LCA),

on the other hand, is a nonhierarchical approach that enables the researcher to pre-specify the number of clusters and that accepts ordinal variables. LCA detects “latent (or unobserved) heterogeneity in samples [it] is based on the assumption that latent classes exist and explain patterns of observed scores across cases” [52]. This approach groups individuals into mutually exclusive and exhaustive types.

Cluster analysis and LCA both generate a series of solutions from which researchers can select the most appropriate ones. Although these techniques are reliable, they are not used in the VEPRé model for the following reasons: (1) The two statistical methods make some interesting variables invisible, because they are hidden by other overwhelming variables, certainly statistically salient, but not significant for the situation or the study. The VEPRé approach conducts a staged analysis, proceeds step-by-step and manually weighs, gathers, or excludes variables. (2) The LCA models that are retained (based on statistical criteria) contain either ten classes, which become very difficult to explain, or four classes, which is too limiting for most situations. The VEPRé model proposes a 5-6-7 class model that seems robust in explaining most situations. (3) These two rapid and robust methods allow for a first reading of the data that must be completed and configured by further evaluations. The VEPRé model starts with a qualitative field analysis that offers direction for the quantitative data analysis. VEPRé also makes it possible to guide research through intuition from the field, during interviews or focus groups.

The VEPRé Method

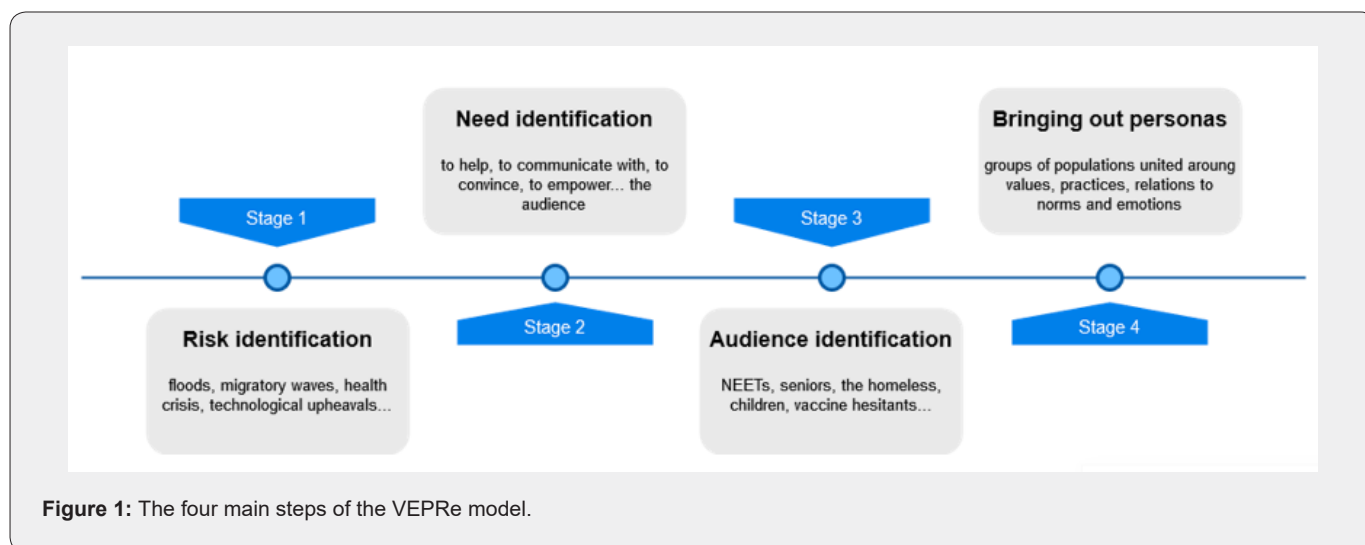
General considerations

As mentioned earlier, the traditional goal of audience segmentation is to divide the population into “relatively homogeneous, mutually exclusive subgroupings, usually based on demographics and perceived [...] needs” [9]. This part will examine how the VEPRé model follows the traditional definition, concepts, and methods and how it differs from the tradition. To begin, the VEPRé model is a methodological model composed of four main steps:

- i. Risk identification, based on a specific societal situation: a long-term risk, such as climate change and technological upheavals, or a targeted crisis, such as a pandemic and floods.
- ii. Needs identification, emanating from scientific institutions, public authorities or the media and definition of an objective for future communication and information campaigns.
- iii. Audience identification based on the needs of the field defined through a first-step sociological approach: life stories (interviews), interactions (observations), and community (focus groups), whereby personas emerge from the being and the speaking [20].
- iv. Audience segmentation that comprises four dimensions

(detailed in part 3.2): social and individual practices, a value-based perspective of cultural and family roots, a fine-tuned palette

of individual and collective emotions, and the relation to family, local, national, and international norms (Figure 1).



The VEPRé methodological model differs from previous segmented analysis methods (Magidson et Vermut 2002). First, whereas most previous works focus primarily on demographic profiles, beliefs, behaviours, and preferences [34], the VEPRé model adopts a holistic approach incorporating emotion-based components, value-based components, informational and social practices, and relations to norms. Then, because its objective is to highlight the most vulnerable segments of the population that can become lost in a mass method analysis, the model combines a survey-based opinion polling with a prior sociological study of subgroups (e.g., interviews and focus groups). The model is also deeply grounded in the reality of the field. Based on the recommendations of Moser [23], it sets up a grouping method that allows for establishing a hierarchy of importance according to a specific need in a risk situation or of a vulnerable population. In addition, unlike the models adopted in previous studies (e.g., the four groups of Rimal and Real [33]), the VEPRé grouping method is inclusive and open. It allows individuals to belong to several groups and, as opinion polling only gives a snapshot of individual profiles at a particular moment, the model proposes groups that allow and prompt individuals to navigate between them. Following this approach, audience segmentation is flexible: it evolves over time and opens the way to the evolution and change of individuals. This grouping method also encourages the completion and mutual support between segments; it is a peer-supporting method. We follow the principles of the two-step flow model, which “highlights the importance of social networks and focuses on so-called opinion leaders, as they are considered the ones who pay close attention to media messages and furthermore can influence people through personal contact” [14]. The VEPRé studies how one group can act as a role model, empowering and providing support and encouragement to another, with

alternatives to the traditional way of life that give hope. Finally, we adopt both an individual and a collective approach, meaning individual beliefs, knowledge, behaviours, and choices, as much as the social dynamics and norms that influence collective decisions, are considered.

By integrating all these aspects, we provide valuable information for informed decision-making to guide strategic choices and develop information and communication interventions tailored to individuals and social groups in crisis situations.

Conceptual and theoretical basis for variable selection

Most segmentation studies [15,53,54] do not specify the conceptual or theoretical basis for their variable selection [9]. For this reason, we dedicate this part of the paper to the detailed definition and description of our method’s variables’ selection. The VEPRé model is a multifaceted theoretical model including four dimensions: values, emotions, practices, and relations to norms (Figure 2).

Values

Values studies originate in behavioural sciences and have a particular importance in risky and crisis situations because values can activate the population’s engagement in case of emergency. Most audience segmentation studies do not include the value system in their variables; at best, they consider some isolated value items in their taxonomy, focusing commonly on psychological construct measures [24]. Research projects on values have nearly all been carried out in the contexts of marketing and psychographics: “psychographics measure where people live, how they spend their time, how they view themselves and their world and the important things in their surroundings” [39]. This definition includes various elements (e.g., where people

live or how they spend their time) not retained in the value-based dimension of the VEPRe. However, the following criteria are retained: how people perceive themselves, their surroundings, and the world, and, most importantly, what they find important in that perception. Schwartz (1992), inspired by sociologists [55], defines values as “the criteria people use to select and justify actions and to evaluate people” (Schwartz 1992, 1). In addition, “values are a latent means of evaluating the social world which are explicitly motivational” [16]. If these elements are merged, what is found is an adequate definition of the concept of values: beliefs

and concepts used by individuals to make choices, motivate, and justify their individual and social behavior.

The importance of values for each individual is hierarchical; that is, various individuals may share the same values (e.g., biospheric, altruistic) but not in the same order. Schwartz (1992) has shown that values are a universal concept, and that a short number of values can be found in all cultures. The complex typology of 11 values designed by the author can be structured in the form of the relations among the value types (Figure 3).

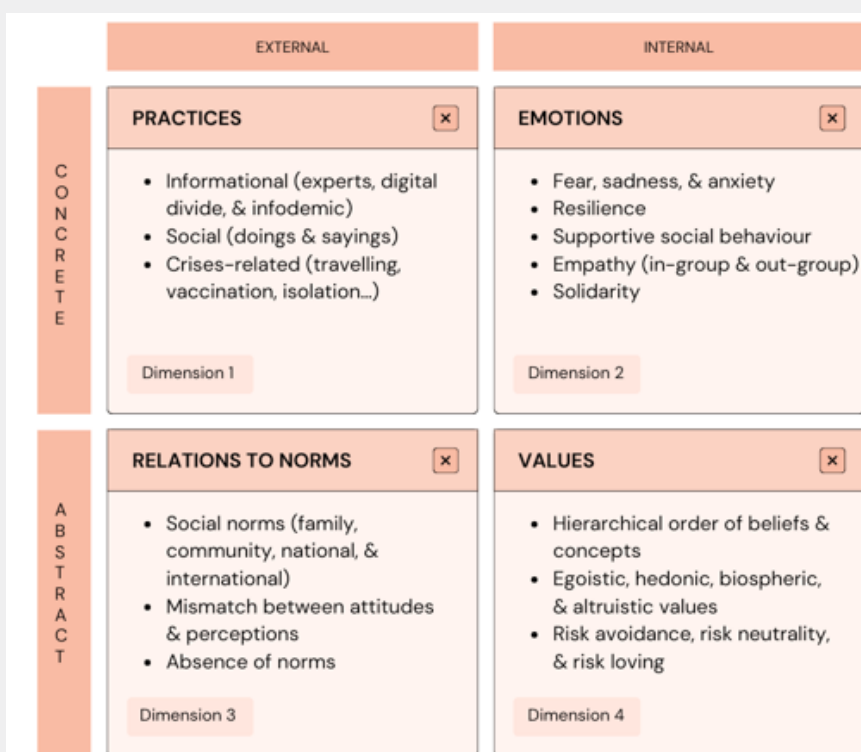


Figure 2: The four main dimensions of the multifaceted VEPRe model.

The model from Schwartz (1992) was then reduced and presented on a dual axes-model: self-transcendence (altruism, forgiveness, and loyalty) versus self-enhancement (power, ambition, and hedonism), and openness to change (self-direction and stimulation) versus conservation (security and conformity). Later, De Groot and Steg [56] proposed three groups of values: egoistic (self-focused), biospheric (environmentally-focused) and altruistic (others-focused) [16]. The three groups of values are particularly interesting for the VEPRe model because they are practical-oriented, and can be used to properly inform individuals. Values are relatively stable over a lifetime, and studies have shown the futility of trying to change the values of individuals through information campaigns (Bouman et al. 2021). For this reason, our

aim is instead “to identify the values that target populations [...] and try to match campaign messages to those values” [16].

The VEPRe model includes four sets of values, following Steg [57] and Bouman et al. (2021). The egoistic type is split into the absolute egoistic type (caring about personal wealth and power) and the hedonic type (caring about pleasure and comfort). We have made this choice because the crisis context is favourable for a desire or quest to maintain comfort (e.g., to maintain a standard of living, eating, sleeping, or housing) without being driven by egoistic values, for example those linked to desires for possessions, money or and power. Our model considers the paradoxical situations that may result from value framing. As explained in Corner et al. [16], to engage the public against climate change, it is possible to promote

climate-friendly behaviour by emphasising, for one segment of the population, the financial benefits of doing so and, for the other, climate or social justice. However, “these sorts of campaigns [...] undermine the ‘common cause’ on which all campaigns on ‘bigger

than self’ issues like climate change ultimately depend, namely, the activation of self-transcendent values in the general population” [16].

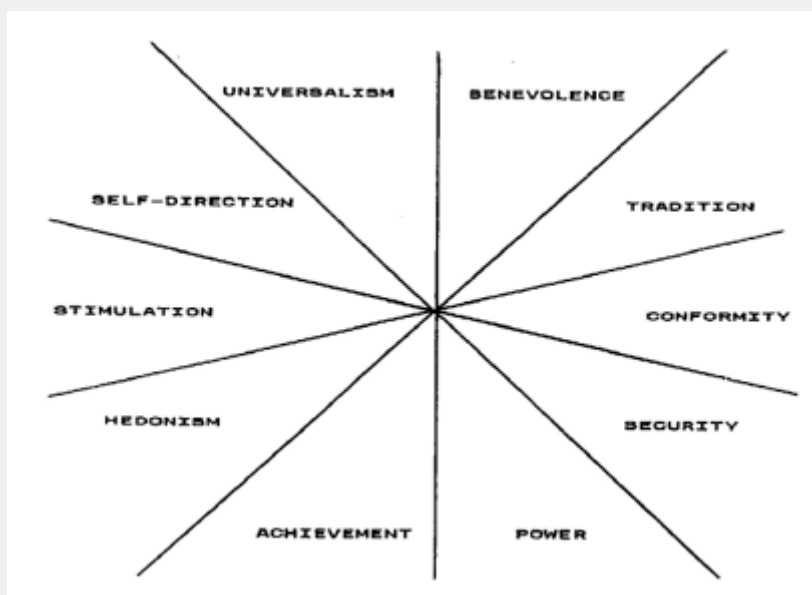


Figure 3: Relations between values (Schwartz 1992, 14).

In addition to general considerations about the four four-value-set, given the specific context in which the VEPRe model is used, particular attention is given to values related to crises, as studied in Dudovskiy [40]: risk avoidance, risk neutrality, and risk loving.

Emotions

Previous segmentation studies tended to use emotional grids that confer great weight to negative emotions in crisis situations. Fear is the most common negative emotion studied in crisis contexts (e.g., migrants, ecology, covid-19): “fear is one of the most archaic emotions we have and thus deeply engrained in our bodies. The ability to immediately recognize a vital threat was, and perhaps still is, essential for the survival of mankind” [7]. Sadness is another commonly studied emotion in crisis reactions and strategies, either immediately or as a second step after the crisis [8]. Lastly, anxiety is presented as the dominant mood for certain crisis situations, for instance, when studies survey young people about climate changes [73].

It is true that, in a crisis context, these negative emotions are prominent, and it is essential to include them in our model. However, the VEPRe model also pays special attention to positive emotions that can emerge from stressful situations such as crises:

[N]egative emotions such as anger, fear, anxiety - even sadness and crying - arouse people’s autonomic nervous systems, producing increases in heart rate, vasoconstriction, and blood pressure, among other changes. Laboratory experiments have shown that experiences of positive emotions can quell or undo the lingering cardiovascular effects of these negative emotions [58]

Surveys should question individuals about both their negative and positive emotions concerning risks and crises and emphasise the importance of positive emotions when addressing emergency reactions. The VEPRe model focuses on two positive emotions that have proved useful in crisis communication management.

The first positive emotion included in the VEPRe model is resilience. Resilience “pertains to the ability of adults [...] to maintain relatively stable, healthy levels of psychological and physical functioning” after trauma [59]. Studies on coping with trauma agree that most people are exposed to at least one significant trauma or life-threatening situation during their life (Ozer et al. 2003) [58]. But all people do not react the same way; some individuals show more resilient behaviour than others. Recently, researchers have proved that the capacity of resilience is not a “trait held by extraordinary individuals” [58]; resilience is a capacity that arises “from the operation of basic human adaptational systems” [60]. In other words, the VEPRe

model focuses on human traits that can help individuals become resilient in crisis situations, because it has been proved that “there are multiple and sometimes unexpected pathways to resilience” [59]. Among these traits, we retain the repressive coping style, that is, “a person’s tendency to inhibit the experience and the expression of negative feelings or unpleasant cognitions in order to prevent one’s positive self-image from being threatened” [61]. This personality trait tends to be more resilient in crisis situations, without postponing the consequences of the threat to later in life, as presumed by earlier studies [59]. Another trait among resilient individuals is the capacity to exhibit positive expressions such as laughing and smiling when speaking about a trauma or a threat: “resilient people have been found to use humor, creative exploration, relaxation, and optimistic thinking as ways of coping” [58]. This trait is of particular interest in the VEPRé model which posits role modelling as a key ingredient in crisis management. Indeed, this trait is common in individuals who elicit positive emotions around them, “which creates a supportive social context that also facilitates coping” [58]

The second type of positive emotions studied in the VEPRé model includes empathy and solidarity. Both traits are prominent in role modeling. Empathy comprises “the ability to take the perspective of the other” [62], among which their beliefs and experiences. In-group empathy is to be contrasted with out-group empathy, with the first being “deeply ingrained in the human body as a precondition for survival” [7]. In a crisis, in-group empathy activates readily, and peer-supporting strategies are developed without the intervention of public authorities. Out-group empathy is more complicated, as it requires group-level emotions that “go with identity and, perhaps even more, with the fear of identity loss” [7]. Neglected children, for example, lack sufficient levels of confidence and identity to develop an empathic personality (Bauer 2014). Solidarity derives from out-group empathy; it “is prompted when we recognise our shared problems” [63]. Moreover, solidarity may emerge among out-group empathists who recognise the shared goals and problems even though they are not part of the same community. Solidarity does not “go hand in hand with the affiliation to specific segments of society, nor does it correlate significantly with class, age or gender” [7]. However, it can be activated by a cognitive understanding of the other’s situation in the form of tailored communication.

In conclusion, the VEPRé model recognizes the importance of a fine-tuned palette of feelings when faced with different crisis situations and experiences. Individual and collective emotions are explored to understand how they influence individuals’ actions and reactions.

Practices

The third dimension of the VEPRé model relies on the study of individuals’ and groups’ practices, examining in depth informational, social, and crisis-related practices.

Recent crises in the digital world have given rise to negative informational effects, such as filter bubbles, fake news, and an infodemic. Other negative effects include stalking, fear of missing out, sleep disturbances, cyber-slacking, compulsive social media use and perceived overloads [5]. These problems reveal that the need is not to increase information but to adapt information and communication to different audiences. To this end, it is necessary to study the population’s information practices and to adapt the news. Traditional audience algorithms only focus on online behaviors; we propose a model that will consider online and offline information practices in crisis situations. Austin et al. [64] explored the factors that affect media use during crisis situations. Their results “stressed the importance of third-party influence in crisis communication and the need for using both traditional and social media in crisis response” [64]. They used the social-mediated crisis communication (SMCC) model to suggest that individuals do not become informed through social media specifically, except when they want “to share or obtain insider information and to check in with family and friends” [64]. The credibility of social media versus traditional media differs greatly between individuals in crisis [64,65]. There is a lack of studies related to how segments of population differ in their patterns of media and information use [30].

The VEPRé model includes the SMCC model and complements it with other criteria, such as the credibility level of authorities and, particularly, the role and impact of experts and scientists in media coverage. Recent findings suggest that experts and lay people have a complementary role in informing the population in crisis times, and scientific findings have a different impact than information disseminated by public authorities. The study from Au and Eya [66] carried out during the Covid-19 crisis also reported the “preference [of users] to avoid advice from public health authorities and institutions of regulatory science and go directly to pre-prints and the latest scientific article” [66]. The authors also discovered the “ability [of users] to switch freely between personal and scientific registers, finding and creating resonances between the two” [66]. The VEPRé model will also consider the neutrality of expert opinions, which can vary significantly, and their “recommendations have sometimes strong axiological implications, involving very different treatment decisions and different sets of cultural, moral, or religious values” [67]. This variation in expert opinions is at the forefront of the model.

Social practices hold a prominent place in the practices-focus of the model. Social practice theories emerged in the late 1990s and were inspired by philosophers like Wittgenstein, sociologists such as Bourdieu and Giddens, and by the scientific concepts of Callon and Latour. Social practices theories aim to overcome the traditional dualism opposing structure (holistic vision) and actor (individualistic vision). Our study pays special attention to the following definition of social practices: “a temporally unfolding and spatially dispersed nexus of doings and sayings” [49]. This

conceptualization is characteristic of second-generation social practice theorists, although some authors (Gram-Hanssen 2010) [68] point out that the naming and number of these components vary from one author to another. Doings are traditionally exemplified in culinary, electoral, industrial and leisure practices. Sayings take the form of describing, ordering, following a rule, explaining, questioning, examining, and imagining [49]. Following the work of Schatzki [49], our model focuses on the links between doings and sayings among the survey participants.

Finally, the VEPRe model focuses on specialized practices related to the crisis or risk under analysis. For instance, health practices were scrutinised during the Covid-19 pandemic, and during the migration crisis, it was travelling, language practices and multiculturalism. Recently, during the energy crisis, the impact and adaptation of technological and slow heat practices on fragilized persons have been examined. This last aspect of the third dimension varies depending on the situation and practices identified during the sociological phase of the model.

Norms

In the fourth dimension of the VEPRe model, we examine the relationships to social norms at different levels and analyse positioning in relation to family, community, national and international norms, which allows for a better understanding of how individuals position themselves in relation to the expectations and values of their social environments and how this may influence their beliefs and attitudes in crisis situations.

According to Sherif [69], the norm is a psychological frame of reference that happens in a social context. In a group situation, an individual is influenced by external frames. For instance, Bouman et al. (2021), who study climate action in relation to group belonging, have suggested “that individuals’ climate actions are motivated by the values and identities of the groups they belong to” (Bouman et al. 2021, 48).

In crisis situations, individuals may demonstrate compliance with social norms, prosocial behaviours, and adherence to the group [70]: “when a group membership is relevant in a given context and diagnostic for the actions to take, individuals’ attitudes, beliefs and actions align with the content of this social identity” (Bouman et al. 2021, 48). However, individuals can also demonstrate animosity [71] and physical distancing [72] in crisis situations. Sociodemographic profiles can explain such various behaviours, as well as individuals’ emotions, values and social practices can.

The VEPRe model also proposes considering the mismatch or discrepancy related to social norms, specifically the possible mismatch between attitudes and perceived group norms. A perceived group norm is what individuals think other people think about a specific social phenomenon. Khamzina et al. [73] describe an example in which respondents in a representative

sample of the French population generally express positive personal attitudes towards multiculturalism and cultural diversity (attitude). However, when asked about what other French people think regarding multiculturalism, there is a strong consensus that the French population are against it (perceived group norm). In this case, there is a mismatch between an attitude and a perceived group norm. The importance of the mismatch between perceived group norms and attitudes relies on the influence the mismatch can have on (future) attitudes. Khamzina et al. [73] illustrate the effect that could arise when individuals perceive that their attitudes do not align with that of the majority. The authors highlight two positive behavioural outcomes: (1) those whose attitudes are in line with the widely held group view would most likely feel confident about their own point of view, and this would lead to reinforcement and outspokenness on the subject [74]; (2) people may stand up for what they believe in when they consider their point of view unpopular [75]. Due to the complexity of the relation between attitudes and perceived group norms, the VEPRe model highly considers mismatches between personal attitudes and social groups’ norms as a crucial dimension in the multi-faceted audience segmentation.

Finally, the VEPRe model integrates the possible absence of influence of external norms in certain individuals [69], for example, when they are isolated from social norms (e.g., those not in education, employment or training, or NEETs) or when they reject social norms (e.g., the rejection of experts and the scientific discourse).

Discussion

The VEPRe model presents several strengths and weaknesses, that both must be discussed. First, it is a holistic model that attempts to consider each individual as a whole, in contrast to studies which stigmatise certain traits. Second, the statistical analysis relies on a qualitative approach using, for example, interviews, focus groups and observations to ensure that fragilised and invisibilised individuals would not be discounted. Then, the model frees us from the constraints of traditional segmentation techniques, among which clustering and LCA, in favour of a manual method that incorporates conclusions from the field. Lastly, the grouping method is free of judgement and proposes transforming personas into role models who may complement and help each other.

On the other hand, there are limitations to audience segmentation, and the VEPRe model is no exception to the rule. The main limitations of audience segmentation and the positioning of the model are as follows. Audience segmentation is an expensive method that “involves a considerable amount of time, money, and human resources, often making it impractical for poorly resourced organizations” [9]. This is an important limitation that the VEPRe model tries to reduce by working with existing panels and local partners, thus making it easier and less expensive to access the necessary data.

Audience segmentation is not a method that is suitable or useful in all contexts, and the effects of this approach on populations may often be modest. In addition, the effects of audience segmentation have not yet been sufficiently evaluated [34]. The VEPRé model will have to be carefully evaluated in the next steps, and for now, it is not suitable for all data analysis objectives.

In crisis contexts, audience segmentation may take too much time to be implemented when a rapid response is needed. This may encourage researchers to predict crisis situations and tailored messages before the crisis happens. The VEPRé model is not immune to this limitation, and predictive approaches may have to be considered.

As argued by Corner and Randall [76], audience segmentation may cause more segregation between groups of people in a society that is already divided and might need a stronger sense of community. We have shown that the VEPRé model is designed to reduce polarisation and increase peer-supporting strategies and solidarity between groups [77-80].

Audience segmentation aims at identifying homogeneous groups of individuals with common features, “but we must recognize that there is no single segmentation solution that is objectively correct. Multiple valid solutions will exist, although depending on the goals of one’s communication program certain solutions may prove to be more useful than others” [9]. Thankfully, the VEPRé model is based on the reality of the field, the needs of a specific crisis, and the objectives of identified stakeholders. Therefore, it is a flexible and customisable model that tries to overcome this limitation [81-88].

Conclusion

The VEPRé model described in this paper aims at providing practical recommendations in crisis communication campaigns through a mixed-method approach for audience segmentation. We provide new and coherent elements to an audience segmentation approach that is still very much fragmented and literature that remains sparse.

The model draws from theoretical models in audience segmentation across various disciplines, including marketing, psychology, sociology, linguistics, and anthropology. We propose a detailed methodology that includes risk identification based on specific societal situations, needs identification stemming from scientific institutions, public authorities, or the media, audience identification based on field needs, and audience segmentation.

This paper introduces a segmentation model applicable to the social sciences, divided into four main dimensions: values, emotions, practices, and relationships to norms. First, the model incorporates four sets of values, with particular attention given to crisis-related values: risk avoidance, risk neutrality, and risk seeking. Regarding emotions, we propose analyzing individual

and collective emotions through a fine-tuned palette of negative and positive emotions, such as resilience, solidarity, and empathy. Social and informational practices are also considered in the model, alongside tailored practices specific to each crisis. Relationships to social norms represent a critical dimension in crisis contexts; we propose analyzing positions relative to family, community, national, and international norms. Additionally, we address the potential lack of external norm influence on certain individuals.

Although theoretically grounded, this paper also references concrete applications of the VEPRé model in various crisis situations, including the climate crisis (Ducol et al. 2022), an educational crisis (Cougnon and Anciaux 2023), and a cultural crisis (Cougnon et al. 2024). These applications demonstrate the model’s robustness across different types of crises. The recommendations provided in these applications also underscore the strong social implications of the VEPRé theoretical model.

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