



Resilience through a multisystemic perspective: analyzing individual, family, and community systems

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Accepted: 28 January 2025

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Abstract

In this article, we approach resilience from a multisystemic point of view in which individual, family, and community characteristics play a part. The main goal of the study is to analyze how the different systems of resilience (individual, family, and community) work in times of uncertainty and great societal challenges, such as the COVID-19 pandemic. Our study uses a mixed methods approach with a sample of 1,436 Spaniards during the COVID-19 crisis. After grouping the descriptions of their living experiences into positive and negative, the study builds and operationalizes the different systems of resilience. Furthermore, the study uses structural equation modeling to analyze the role of each system on how individuals face the future in a situation of uncertainty. The study indicates that family resilience, followed by individual and community resilience, helps individuals to face the future with high optimism. In contrast, individual resilience helps to face the future with less pessimism. In addition, all systems of resilience—individual, family, and community—significantly impact an optimistic view of the future through the mediation of positivity. Our article contributes to the ongoing debates regarding the role of resilience in building a stronger society that is capable of facing challenges and recovering from adversity.

Keywords Individual resilience · Family resilience · Community resilience · Well-being · COVID-19

Introduction

The COVID-19 pandemic has changed much of our lives: social isolation, economic insecurity, health-related risks, loss of family members, friends, and colleagues, and more general uncertainty due to an unprecedented situation.

Therefore, it has taken an important toll on mental health, with psychological consequences (i.e., stress, anxiety, depression, etc.) and deterioration of well-being (Xiang et al., 2020). However, the levels of stress were not the same for all. Since the beginning of the pandemic, researchers have examined the COVID-19 living experience and the psychological impacts, identifying different vulnerable groups more susceptible to psychological distress (see, e.g., Wang et al., 2020). For instance, being a woman (Morales-Vives et al., 2020), having children (Brown et al., 2020), being young (Varma et al., 2021), living alone (Bu et al., 2020), being unemployed (Xiang et al., 2020), and presenting a low socioeconomic status (Liu et al., 2020) have been associated with higher levels of psychological distress. On the other hand, having a partner (Moccia et al., 2020), being a man (Brouard et al., 2020), and being older (Brooks et al., 2020) are characteristics that can soften the psychological impact of the pandemic. Although there has been an effort to understand the sociodemographic factors driving or preventing more psychological distress, there are other factors to be explored such as resilience.

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This is the case of resilience: the capacity to adapt and respond correctly in a critical occasion or crisis, and thus, a resource and mechanism to overcome adverse situations (McGinnis, 2018). Although resilience has been constructed and operationalized analytically as success in difficult circumstances, there is no universally accepted way to achieve it. In that sense, there are lines of research that have focused on psychological characteristics, intrinsic to the individual to identify personal features that contribute to resilience (see, e.g., Killgore et al., 2020). Others have studied resilience not only as something that one personally possesses but rather as a more holistic characteristic in which the interpersonal characteristics and the socio-community environment play a part (Distelberg et al., 2015; Liu et al., 2017).

In this paper, we take this multisystemic approach (individual, family, and community) to resilience. Most research on this line has been concentrated on the theoretical considerations and the analysis of factors that contribute to resilience: the individual characteristics, family features and community factors (see e.g. Distelberg et al., 2015, 2018; Gartland et al., 2011). In this paper, we acknowledge these advancements, and we take the suggested ideas not only to construct each system of resilience but also to go a step further and examine how each of them works in moments of stress, great challenge, and uncertainty to adapt to and handle the future. This is particularly relevant as the pandemic has shaken everyone's lives, and thus, to study how the different systems, of which we are a part as individuals, contribute to confronting the situation better. This is crucial for our well-being as individuals and as a society. But, are the different systems having the same impact? What about individuals who are positive by nature; what are the systems of resilience bringing to them?

To tackle these questions, the current paper utilizes a mixed-method approach with a sample of 1,436 Spaniards, who openly described their living experience during the pandemic. The study first analyzes the free word associations of the participants on their feelings and thoughts that best describe their encounters with the pandemic by clustering them as positive and negative. Secondly, it constructs and confirms each system of resilience—individual, family, and community—and then analyzes the role that each of them plays in how the individuals confront the future in a situation of great challenges and uncertainty, as has been the case in the COVID-19 crisis, using a structural equation model (SEM). The paper highlights the multifaceted role of resilience in shaping well-being and managing attitudes during the crisis. Family resilience, followed by individual and community resilience, plays a key role in fostering high levels of optimism about the future. In addition, individual resilience is particularly effective in reducing pessimistic future. All three resilience systems—individual, family, and

community—contribute significantly to shaping an optimistic view of the future, with positivity acting as a mediating factor. Our article contributes to the ongoing debates on the role of resilience for building a healthier society capable of bouncing back from challenges and adversity.

Theoretical framework

Resilience from a multisystemic approach

Resilience is a term that has become ubiquitous over the last few years. The concept has a long tradition in psychology and ecology, and it has been adopted in other disciplines, such as political science and sociology, among others. Even though everyone has recently been talking about resilience, it is a concept whose ontology is still a question of debate (Braslett et al., 2013). Indeed, the usage of the term in many fields and circles has widened the concept to being a floating signifier, that is, a term that integrates multiple and different meanings (Gajaweera & DeAngelo, 2021), or that has had different lines of studies (Masten et al., 2023). In that sense, we can notice how resilience was first a term that referred to traits or characteristics of individuals, communities, and ecosystems that give the ability to adapt or recover from adversity (Masten, 1994). Later it came to include definitions of system theories in which resilience is not a possessed feature but rather a process constructed from multiple elements and levels, of which each individual is a part, from a personal/micro or meso system level to a macro system level (Liu et al., 2017; Ungar, 2011; Walsh, 2003; Masten et al., 2023). Following this line of thought, after assessing more than 270 current studies on resilience, Windle et al. (2011, p. 2) defined resilience as “the process of negotiating, managing and adapting to significant sources of stress or trauma. In a more recent article revision, Ungar and Theron (2020) have pointed out that resilience is a process of multiple systems. In a similar vein, Masten and Motti-Stefanidi (2020) have claimed that they are interconnected and interacting systems. Assets and resources within the individual, their life and environment facilitate this capacity for adaptation and ‘bouncing back’ in the face of adversity.” Despite the increased acknowledgement of the importance of deploying resilience to face the ongoing multifaceted societal challenges and all the evidence related to a multisystemic perspective of it, the literature has tended to conceptualize and focus on one type of resilience (i.e., individual features) at a time, guided and framed within different fields. Thus, the resilience framework has seldom integrated the systemic process of individuals within empirical research (see, e.g., Windle et al., 2008). However, there are studies considering the systemic approach of resilience.

This is the case of some theoretical studies that have given grounds to think beyond the intra-individualistic factors and consider the resilience of individuals due to personal characteristics and interpersonal and socioecological factors (Benzies & Mychasiuk, 2009; Bhana & Bachoo, 2011; Black & Lobo, 2008; Liu et al., 2017; Ungar, 2011; Tippens et al., 2023). Yet a recent systematic scope review of resilience during the COVID-19 pandemic has found out that the majority of articles reported as a combination of personal or individual factors, while seldom studies have taken into account relational resources such as family or community factors (Theron et al., 2023). However, other empirical studies sharpen the multisystemic perspective of resilience on the relational and environmental context (Cameranesi et al., 2022). Moreover, there have been empirical studies that have proposed and validated scales that consider the multidimensional ecological structure of resilience: individual, family, community (Distelberg et al., 2015, 2018). Therefore, in this paper, we continue with the idea of resilience from a multisystem point of view. However, rather than constructing and assessing a scale integrating the three systems, we have assessed each system separately (cf. Distelberg et al., 2015, 2018; Gartland et al., 2011).

Based on the theoretical and empirical considerations of resilience as a multisystem asset, we have considered three levels or systems: the micro level or individual resilience, the meso level or family resilience, and the macro level or community resilience (see also Distelberg et al., 2015, 2018).

Individual resilience

The individual features that facilitate the anticipation, adaptation, and recovery from stress and challenging moments and situations have been considered and studied mainly by psychologists (see Connor & Davidson, 2003). Within the field, there have been different proposals for scales to measure resilience and different theoretical and empirical considerations of the most salient characteristics of the self as grounds for resilience. In that sense, we can see some common ideas that define individual resilience. As Place et al. (2002) claimed, being self-reliant and able to think and act independently are characteristics that can protect individuals against adversity. Similarly, research has identified that individuals are more resilient when they consider themselves to be able to achieve their life aims (Ryan & Caltabiano, 2009; Seccombe, 2002). Therefore, individuals' judgment of their ability to succeed in their goals, that is, self-efficacy, is a critical component of individual resilience. In addition, scholars have pointed out that individuals who perceive that they have the capacity to take control of their life, in other words, portraying internal control, are

presumed more resilient (Benzies & Mychasiuk, 2009). As Ryan and Caltabiano (2009, p. 42) have suggested, "resilient individuals have a greater internal locus of control and are optimistic about their ability to create positive outcomes for themselves and others." Hence, it is well established that internal control should be considered an element to predict and measure individual resilience (see, e.g., Connor & Davidson, 2003; Windle et al., 2008, 2011). Moreover, having respect for oneself has been considered a protective feature against negative situations (see, e.g., Windle et al., 2008). Therefore, scholars have recognized the role of self-esteem when assessing and determining individual resilience (Windle et al., 2011).

Family resilience

Family has also been identified as an important system for building resilience. Indeed, many studies have addressed the family protective factors shaping the capacity to endure in the face of risk factors (Seccombe, 2002). In this sense, previous studies have identified constructs of family resilience, such as family cohesion, external family support seeking, making meaning of adversity, internal family support, open communication, and traditions and rituals. Family cohesion is defined as the sense of family attachment, togetherness, and warmth (see Bhana & Bachoo, 2011). This feature has been considered an important pillar to bounce back (see, e.g., Benzies & Mychasiuk, 2009). Following this line of thought, family cohesion can work as a spin-off from other resources that are important for individuals when facing adversity, as is the case of open communication (Black & Lobo, 2008), internal family support (Benzies & Mychasiuk, 2009; Distelberg et al., 2015, 2018) or their capability of making meaning of adversity, that is, approaching difficulties as shared challenges and thus not leaving any member behind (Walsh, 2003). However, another important aspect in the family sphere that has been taken into consideration as a resilience feature is the ability to recognize limitations and seek external support when needed (Black & Lobo, 2008). Finally, scholars have also acknowledged the importance of traditions and rituals within the family as a resilience resource (Black & Lobo, 2008; Distelberg et al., 2015, 2018; Walsh, 2003).

Community resilience

Individuals and families are part of their community and influenced by it (Benzies & Mychasiuk, 2009; Distelberg et al., 2015; Ungar, 2011). In that sense, there are aspects at the community level that construct resilience resources for individuals. Scholars have also recognized and examined what aspects of the community grant resilience. Some

Table 1 Constructs of systems resilience

Individual Resilience	Family Resilience	Community Resilience
Self-esteem	Open communication	Community attachment
Internal control	Traditions and rituals	Local community closeness
Self-efficacy	External family support seeking Making meaning of adversity Internal family support Family cohesion	

of the most well-established elements in the literature are community attachment and community closeness. Along this line of thought, some empirical studies have shown how community connectedness may buffer against negative outcomes (see, e.g., Lloyd-Richardson et al., 2002). Similarly, previous literature has argued the importance of community participation in individual support, identity maintenance, and associated rewards (see, e.g., Voydanoff, 2005). Yet the individual attachment to a community grants comfort to individuals (Zwiers et al., 2018). Indeed, community attachment has been rated with better outcomes: greater individual well-being and better positive affective states (O'Brien et al., 1994). As Berkman et al. (2000) have argued, the reasons behind this are the social, emotional, and informational resources that attachment entails typically. Therefore, we can consider these two ideas as factors constructing community resilience.

Although we acknowledge the broad conceptual spectrum of the term and the complexity of assessing resilience empirically, Table 1 summarizes the crucial assets well supported by the literature that constitute each level of resilience and that we operationalized and constructed in our empirical study.

Social representation theory

As this paper aims to study how the different systems of resilience help in moments of crises and uncertainty, it uses social representation theory (SRT) as a theoretical premise to conceptualize how individuals experience the COVID-19 situation. This was initially conceived as a theoretical approach for understanding people's everyday thinking and their social strategies in dealing with abstract, threatening, unfamiliar concepts and situations that penetrate public discourse and society (Moscovici, 1988). Likewise, the SRT points out that people shape their views of new circumstances or risks through interaction, particularly through communicative work between people and the media, not only as individuals but also as part of a group (Wagner &

Hayes, 2005). That is why ideas are common and shared, since they are socially constructed (Moscovici, 1988). Research focusing on risk situations, such as economic crises (Gangl et al., 2012; Roland-Lévy et al., 2016) or emergency infectious disease, such as COVID-19 (see, e.g., De Rosa & Mannarini, 2020; Eiguren et al., 2021; Idoiaga et al., 2020; Prati et al., 2021) have used SRT and free word associations. In this line of thought, the important role played by emotions in making a new situation recognizable and understandable has been demonstrated (Emiliani et al., 2020; Idoiaga Mondragon et al., 2021). Moreover, the concept of attitude, which is the predisposition to respond to a situation in a positive or negative way, is also relevant in SRT (Schultes et al., 2018). Hence, the representation of a social situation is strongly related to individuals' attitudes and emotions about a situation. Even though they are individual, attitudes and emotions about a situation are based on the evaluation component in its social representation, so the underlying structure of attitudes is a collective phenomenon (Moscovici, 1988).

Numerous studies on the psychological and social impacts of COVID-19 on the population throughout the pandemic have noted the negative emotional impact (i.e. feeling of loneliness, stress, anxiety, and depression (Banerjee & Rai, 2020; Salari et al., 2020). Therefore, in this situation, it is easy to presuppose that most people will describe their living experience during the pandemic negatively. However, previous studies have also shown that some elements help people to be positive in contexts of stress and uncertainty (Israelashvili, 2021), such as reducing the number of daily hassles (Ahrens et al., 2021) and a lack of preexisting mental health problems (O'Connor et al., 2021), among others. Hence, some individuals may present a positive experience while living through COVID-19. Yet, previous research indicates that resilience influences our emotions. For instance, Tugade and Fredrickson (2004) found that resilient individuals experience more positive emotions during stressful situations, which helps them recover more effectively and maintain psychological well-being. Furthermore, other studies suggest that positive emotions mediate the relationship between resilience and various positive outcomes, such as well-being, optimism, and goal attainment (Ong et al., 2006). Hence, positive emotions may help individuals envision positive future possibilities and maintain hope even in challenging circumstances. In contrast, negative emotions might inhibit the development of positive future visions. In this line of thought, previous research has shown that high resilience can reduce the impact of negative emotions, such as anxiety or depression, which otherwise could constrain one's ability to formulate positive future goals (Hu et al., 2015). Therefore, positive emotional states can promote goal-directed behavior, whereas negative states may cause

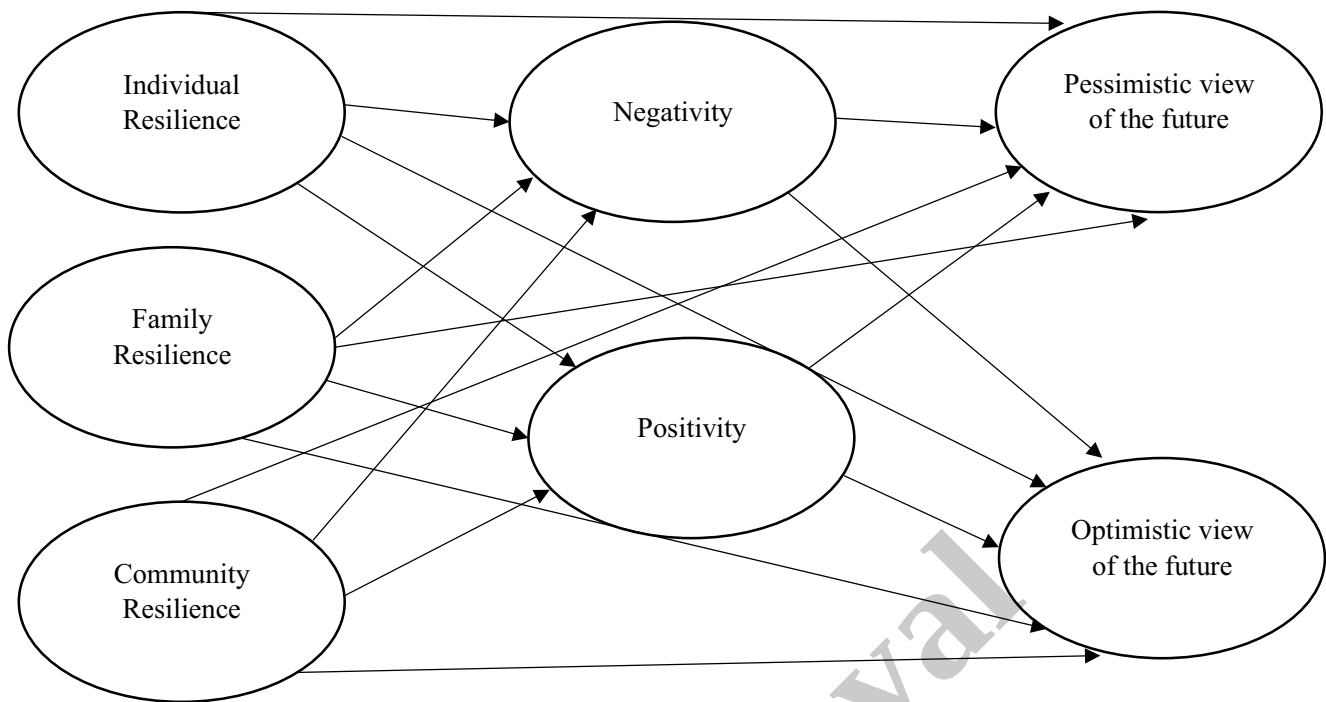


Fig. 1 Multisystem model of resilience: from resilience the perceived future perspective

withdrawal or disengagement from future visions (Carver & Scheier, 1998). Even though the aim of this paper is not to examine the factors influencing the negativity or positivity of individuals, we acknowledge that the way people describe and report their COVID-19 experiences are influenced by the level of resilience that individuals have, and these may influence the way they encounter the future.

The current study

Despite a general understanding of the negative psychological impact that the COVID-19 pandemic has brought to the lives of almost everyone, in this paper we want to analyze whether and how resilience can boost hope and optimism for the future. This is an important issue at a time when mental health and psychological well-being have been drastically damaged as the pandemic took more time than everyone thought. Hence, understanding the resources that help us to confront the future better is worthwhile. Moreover, as we have explained above, even though we take the idea of resilience as a multisystem, in this paper we separate the sources of resilience according to their different levels: individual, family, and community. This will shed some light on the role of each level in transforming the current experienced situation into a perceived encouraging future, in other words, whether and to what extent the different levels of resilience help to see the glass as half full and not as half empty. Based on the aforementioned theoretical and empirical considerations, we formulate the following research questions:

RQ1: How do the different systems of resilience influence the perceived future perspectives?

RQ2: How do the different systems of resilience influence the way people experience difficult times?

RQ3: How does the way people experience difficult times affect the perceived future perspectives?

The hypothesized model in Fig. 1 summarizes all the interrelations and paths.

Methods

Data

The data for this study were collected from 1,707 Spaniards, gathered from a representative national sampling survey during the COVID-19 pandemic¹. Participation in the survey was voluntary and anonymous. To minimize sampling bias, the recruitment strategy emphasized regional diversity within Spain and utilized a range of recruitment channels, such as interest groups, support organizations, and local municipalities. In the study at hand, the criteria for inclusion were to clearly express their living experience in a positive or negative way, resulting in a final subsample of 1,436 participants. The participants were from all the autonomous

¹ The survey was sent to a stratified sample of 3,280 Spaniards from a survey panel, due to incomplete responses the final sample consisted of 1,707 responses (52% response rate).

provinces of Spain. Among the participants in the subsample considered, 85.02% lived in urban areas, while 14.97% resided in rural ones. Working situations were also quite diverse: 24.02% were teleworking, 20.54% were going to their workplace, and 43.1% were unemployed. The participants had various living and personal situations, including 56.05% married, 18.73% who were living together as unmarried couples, and 68.24% having children versus without (31.75%). Among the participants, 50% were men and 49.93% women, with an average age of 49.54 years ($SD=10.692$).

Qualitative analysis based on free word associations

The survey included an open question to the participants. The question was as follows: Think of 3 words that describe well how you live during the COVID-19 emergency. What are the first three words that come to mind? Using this technique of free word associations drawn on SRT, we obtained shared representations of the COVID-19 crisis, that is, the exact expressions that participants have in mind to describe their living experience in this new and uncertain situation.

The analysis and coding of the words followed three steps that have been well validated in studies using free word association techniques (see, e.g., Gero et al., 2020). First, we lemmatized the terms; this implies that the singular and plural of the same word were grouped together. Second, we grouped words that were synonyms. Finally, all the terms with similar meanings were clustered into different categories, which were then merged into different dimensions using inductive coding by triangulation. Three researchers performed the process, and the final categories and dimensions were determined by consensus among them (see, e.g., Guerrero et al., 2010). We assessed the intercoder reliability with Cohen's kappa coefficients to determine the level of agreement (0.76), which is considered as substantial agreement (O'Connor & Joffe, 2020). Based on the aforementioned stages of analysis, Table 2 shows the final clustering of categories and dimensions and their frequencies. After distilling the large amounts of textual data ($N=5.121$ words) into categories and dimensions, we grouped the dimensions into manageable and meaningful themes that capture the essence of the emotions and attitude from the data. As Braun and Clarke (2006) suggest, thematic analysis allows researchers to find patterns across data, even if the result is abstract, without losing the richness of the qualitative responses. Moreover, according to Tashakkori and Teddlie (2010), combining qualitative and quantitative approaches often requires simplifying qualitative data into themes that can be measured or counted, which enhances the interpretability and generalizability of the findings.

From the dimensions we have identified two main themes: positivity and negativity.

To study whether and how the current personal description of a given situation may be a result of resilience and how these may affect the way in which individuals envisage the future from their current personal descriptions of a given situation, we considered the representations that clearly expressed positivity and negativity. Therefore, for the following analysis, we worked on the dimensions of negative emotions, negative attitude, positive emotions, and positive attitudes. The participants needed to express three words to describe their living experience during COVID-19. Based on that, we coded the individuals in the following way: positive (persons expressing ≥ 2 positive terms, persons expressing 1 positive term and 2 other terms which are not negative), negative (persons expressing ≥ 2 negative terms, persons expressing 1 negative term and 2 other terms which are not positive). As a result, from 1,707 individuals only 1,432 individuals comprised the subsample that we worked on for the rest of our analysis. From that, 1,039 were coded as negative, and 397 were coded as positive. Regarding the exclusion of respondents whose answers did not fit into these categories, it's important to note that data cleaning and exclusion are standard practices in research to ensure the reliability and validity of findings. While this may reduce the sample size, it helps focus on responses that are meaningful to the research purpose. Moreover, Creswell and Clark (2017) highlight that selective coding of qualitative data based on the relevance to the research question enhances the rigor of the analysis and the coherence of the results.

Instruments

Variables and items included in the construction of the multisystem resilience scales

The *Individual Resilience* scale was assessed as a composite variable, using three dimensions: self-esteem, internal control, and self-efficacy. *Self-esteem* was composed of two items that included the following statements: "In general, I have a lot of confidence in myself" and "In general, I am satisfied with myself", all measured on a Likert scale (1 = totally disagree and 5 = totally agree) (adapted from Caprara et al., 2012). *Internal control* is assessed from two items that evaluate the following: "I've got feelings I'd rather not have", where the participants responded from 1 (never or rarely) to 5 (frequently) (adapted from Antonovsky, 1993). Finally, *self-efficacy* was composed of seven items, which included the following: "So far my life: (from) It has not had clear objectives or purposes [...] (to) It has had clear objectives or purposes", evaluated on a scale from one extreme to the

Table 2 Frequencies and Percentages of Dimensions and Categories

Dimensions	Categories (most frequent words)	Freq. (%)
Negative emotions		1062 (62.3)
	Sadness (Sadness, grief, depression, desolation, discouragement)	183 (10.7)
	Loneliness (loneliness, abandonment, forgotten, vulnerable)	126 (7.4)
	Anger (anger, rage, indignation)	108 (6.3)
	Uncertainty (uncertainty, worry, uneasiness, anguish)	694 (40.7)
	Disappointment (disappointment, deception, lie)	88 (5.2)
	Bad (bad, discomfort, pain)	26 (1.5)
	Fear (fear, insecurity, scared)	350 (20.5)
Positive emotions		173 (10.1)
	Joy (joy, happiness, encouragement)	29 (1.7)
	Empathy (empathy)	3 (0.2)
	Emotion (emotion)	6 (0.4)
	Love (love, affection)	12 (0.7)
	Amazement (surprise, amazement)	13 (0.8)
	Desire (expectant, craving, eager, desire)	56 (3.3)
	Good (good, steady)	56 (3.3)
	Convenience (comfort, convenience)	10 (0.6)
Description of the situation		302 (17.7)
	Chaotic (chaos, catastrophe, crisis, ruin)	97 (5.7)
	Unusual (disbelief, unusual, surreal)	59 (3.5)
	Closure (isolation, imprisonment, restraint)	132 (7.7)
	Duration (long, wait, pause, pending)	40 (2.3)
Positive attitudes		664 (38.9)
	Acceptance & Discipline (resignation, acceptance, adaptation)	172 (10.1)
	Solidarity (solidarity, generosity)	15 (0.9)
	Determination (courage, strength, bravery)	27 (1.6)
	Creativity (creativity, imagination, resourceful)	19 (1.1)
	Hope (hope, positivity)	151 (8.9)
	Patience (patience)	126 (7.4)
	Tranquility & Introspection (tranquility, rest, calm, introspection)	286 (16.8)
	Prevented (caution, prevention, responsibility, prudence)	136 (8)
Negative attitudes		714 (41.9)
	Boredom (bored, lack of interest, listless)	237 (13.9)
	Overwhelmed (overwhelmed, anxiety, stress)	340 (19.9)
	Tiredness (tired, fed up, exhausted)	280 (16.4)
	Negativism (negativism)	8 (0.5)
	Monotony (monotony, routine)	32 (1.9)
	Unemployed (unemployed, unemployed, records of employment regulation)	16 (0.9)
	Lack of solidarity (lack of solidarity)	2 (0.1)
	Passivity (passivity)	3 (0.2)
	Lazy (lazy)	4 (0.2)
	Sedentary lifestyle (sedentary lifestyle)	14 (0.8)
Objects & Places		54 (3.2)
	Technology & Information (information, video call)	18 (1.1)
	Outdoor spaces (going out, air, nature, sun)	14 (0.8)
	House (house, home)	26 (1.5)
Actions		223 (13.1)
	Help (help, collaborate, cooperate)	10 (0.6)
	Work (work, telework, employment)	107 (6.3)
	Eat & Cook (eat, cook)	19 (1.1)
	Time Management & Leisure (free time, leisure, busy, entertainment, sport)	28 (1.6)
	Help (help, collaborate, cooperate)	95 (5.6)
Pandemic	Pandemic & Health (confinement, health, virus)	147 (8.6)
Relations	Relationships & Family (family, together, living together)	105 (6.2)

other; “I have confused and unclear feelings and ideas”, “I feel like a failure in certain situations”, and “I get the feeling that the things I do in my daily life don’t make much sense” were all measured on a Likert scale (1 = totally disagree and 5 = totally agree). Finally, the two items that formed self-efficacy were “during the last week, I have performed less than I would have liked at work and in other daily activities due to my emotional state (feeling depressed or anxious)” and “during the last week, my concentration at work and in other daily activities has decreased due to my emotional state (because I feel depressed or anxious)”, with responses from 1 = totally disagree to 5 = totally agree (adapted from Antonovsky, 1993; Graham, 1987). Confirmatory factor analysis of the items in the present sample supported a single-factor structure. The goodness-of-fit measures were as follows: $\chi^2=437.23$; ($p<0.001$); $\chi^2/df=31$; RMSEA=0.08; TLI=0.93; CFI=0.96.

The *Family Resilience* scale consisted of a composite variable with six dimensions: open communication, traditions and rituals, external family support seeking, making meaning of adversity, internal family support and family cohesion. *Open communication* was assessed according to three items that express the degree of satisfaction, from 1 = totally dissatisfied to 5 = totally satisfied with the following: “the way we communicate with each other”, “the way we discuss issues”, and “the way we express criticism.” *Traditions and rituals* was composed of four items in total that evaluate elements related to the time spent with family: “we do more activities together” and “we had more fun together” measured on a Likert scale (1 = totally disagree and 5 = totally agree), and two items that express the degree of satisfaction from 1 = totally dissatisfied to 5 = totally satisfied with “our family’s ability to share positive experiences” and “the amount of time you spend together, as a family” (adapted from Gómez-Muzzio & Muñoz-Quinteros, 2014). *External family support* was assessed according to three items: “my friends are really trying to help me”, “I can count on my friends when things go wrong”, and “I have friends with whom I can share sorrows and joys”, all three of which were measured on a scale from 1 = never to 5 = a lot. *Making meaning of adversity* was composed of two items measured on a scale of satisfaction from 1 = very unsatisfied to 5 = very satisfied: “our family’s ability to cope with adversity” and “our family’s ability to resolve conflicts.” *Family cohesion* was assessed with two items measured on a Likert scale (1 = totally disagree and 5 = totally agree): “we have become colder and more distant” and “we are more emotionally united.” Finally, *internal family support* was composed of twelve items, of which four measured the level of the degree (from 1 = nothing to 5 = a lot) of family support: “my family is really trying to help me”, “my family gives me the emotional support I need”, “I can really talk about

my problems with my family”, and “my family is really trying to help me make decisions.” The remaining eight items evaluated on a Likert scale (1 = nothing and 5 = a lot) the role of the family when an individual experienced stress due to COVID-19: “it has helped me to look at the stressful situation from a different perspective”, “he has proposed practical solutions to the problems caused by the situation”, “he listened to me and tried to understand me”, “he has shown me that he understands how I feel”, “to help me, he has done things that I normally do”, “blame me for not managing stress well”, “my stress has not been taken seriously”, and “he supported me, but he did it reluctantly and was unmotivated” (Bodenmann, 2008). Confirmatory factor analysis of the items in the present sample supported a single-factor structure. The goodness-of-fit measures were as follows: $\chi^2=2135.06$; ($p<0.001$); $\chi^2/df=293$; RMSEA=0.06; TLI=0.90; CFI=0.91.

The *Community Resilience* scale was a composite variable comprising two dimensions: community attachment and local community closeness. *Community attachment* was based on two items linked to the following question: How much do you think your sense of belonging to the following areas has changed? “to my local community (neighborhood / area)”, “to the city or town where I live”, measured on a Likert scale (1 = it has decreased a lot to 5 = it has increased a lot). Finally, *local community closeness* was composed of four items that assess attachment to and participation in the community: “I participate through the Internet in solidarity and citizen participation initiatives” and “I have created initiatives through the Internet that I think can be useful to help people live better in this situation”, assessed from 1 = totally disagree to 5 = totally agree, as well as “they have allowed me to meet a greater number of people” and “they have allowed me to increase the number of people I can count on in case of need”, measured on a scale from 1 = nothing to 5 = a lot. Confirmatory factor analysis of the items in the present sample supported a single-factor structure. The goodness-of-fit measures were the following: $\chi^2=302.19$; ($p<0.001$); $\chi^2/df=8$; RMSEA=0.04; TLI=0.90; CFI=0.94.

Variables and items included in the structural equation model

The purpose of this paper was to assess the role of the different systems of resilience in the ways individuals perceived future perspectives. Apart from the three systems of resilience constructed with the aforementioned dimensions and the two dichotomous variables (positivity and negativity) operationalized from the qualitative analysis based on the free word association technique, the model also considered the future perspective of individuals. The future perspective was divided into two constructs. On the one hand,

the *pessimistic view of the future* was formed by five items measured on a Likert scale (1 = totally false and 5 = totally true): “I fear that the problems that concern me now will continue to concern me for a long time”, “I am terrified that I might have to face crises or difficulties in life”, “I fear that in the future my life will change for the worse”, “I fear that changes in the economic and political situation threaten my future”, and “I am worried about not being able to achieve my goals in the future.” On the other hand, the *optimistic view of the future* was constructed according to two items: “I have great confidence in the future” and “I look to the future with hope and measured enthusiasm”, assessed from 1 = totally disagree to 5 = totally agree (Caprara et al., 2012). The Cronbach alpha coefficients for all measures are given in Table 3.

Data analysis

The proposed theoretical model (Fig. 1) was tested with structural equation modeling (SEM, using AMOS 28) with maximum estimation, a procedure for analyzing models with latent constructs (Baron & Kenny, 1986), using bootstrapping technique, a popular method of testing indirect effects (Shrout & Bolger, 2002). The substantive model included seven latent constructs, two of which had dichotomous variables (negativity and positivity). Descriptive statistics, correlations, and reliability coefficients are presented in Table 3. To examine the data fit, we used the comparative fit index (CFI of >0.90), the Tucker-Lewis index (TLI of >0.90), and the root mean square error of approximation (RMSEA < 0.08) to represent acceptable good fit (Hu & Bentler, 1999).

Results

The measurement model was tested using the model fit indices, which were satisfied: $\chi^2 = 158.43$; ($p < 0.001$); $\chi^2 / df = 5$; RMSEA = 0.04; TLI = 0.96; CFI = 0.97. The range of the standardized factor loadings for the indicators forming the latent constructs were between 0.71 and 0.88, and all

values of $p < 0.002$. These results demonstrate a good fit of the proposed measurement model.

The hypothesized structural model was found to have a goodness-of-fit ($\chi^2 = 262.63$; ($p < 0.001$); $\chi^2 / df = 5$; RMSEA = 0.04; TLI = 0.95; CFI = 0.98). All the interrelations within the model were supported with the significant relations between the variables at the $p < 0.01$ level of significance (See Fig. 2).

Within the effects of systems of resilience on their future perspective, we can observe how individual resilience ($\beta = 0.38$), family resilience ($\beta = 0.43$), and community resilience ($\beta = 0.21$) foretell a perceived optimistic view of the future. Hence having family resilience, followed by individual resilience and community resilience, positively associates the perceptions of the individual about having an optimistic view of the future. In a similar vein but in a negative manner, results indicate that individual resilience significantly predicted a less pessimistic view of the future ($\beta = -0.28$). This implies that individual resilience decreases a pessimistic perception of the future. However, the results demonstrated that neither family resilience ($\beta = -0.10$) nor community resilience ($\beta = -0.09$) influenced the pessimistic view of the future.

Regarding the association between the systems of resilience on the actual perception of the situation, we can observe how individual resilience significantly predicted negativity ($\beta = -0.33$). That is, as individual resilience increases, negative perceptions decrease. Regarding family resilience, negativity did not predict significantly ($\beta = -0.07$). Likewise, community resilience as well did not predict negativity significantly ($\beta = -0.08$). This means that, despite individuals' family and community resilience, as they negatively experienced the unprecedented situation, the future perceptions are affected. Finally, it was interesting to find that individual resilience indirectly affected the pessimistic view of the future through the mediation of negativity ($\beta = -0.22$) but not significantly with family ($\beta = -0.06$) and community resilience ($\beta = -0.02$). Results suggest that although an individual may perceive a situation negatively, individual resilience may still help perceive the future in a less pessimistic manner. However, this was not the case with family and community resilience.

Table 3 Descriptive statistics and correlations

Variables	M	SD	CA	1	2	3	4	5	6
1. Individual Resilience	4.50	1.06	0.87	0.30**					
2. Family Resilience	3.54	0.57	0.86						
3. Community Resilience	2.54	0.67	0.82	0.19**	-0.04				
4. Pessimistic view of the future	3.37	0.91	0.86	-0.11**	-0.48**	0.04			
5. Optimistic view of the future	3.40	1.06	0.82	0.36**	0.44**	0.17**	-0.45**		
6. Positivity	0.23	0.42	-	0.09**	0.25**	0.03	0.22**	0.22**	
7. Negativity	0.61	0.48	-	-0.08**	-0.27**	-0.04	-0.24**	-0.24**	-0.68**

N = 1707. M = mean, SD = Standard Deviation, CA = Cronbach Alpha. ** $P < 0.01$

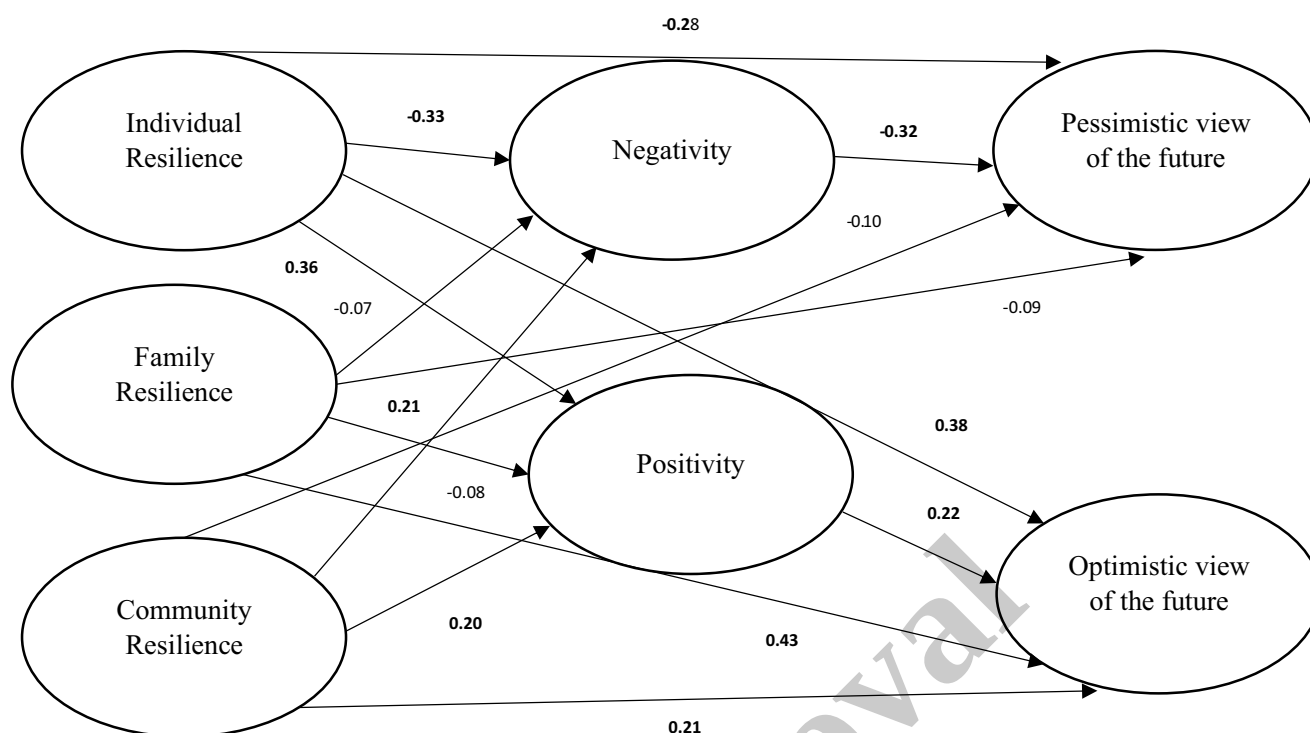


Fig. 2 Structural model. *Note.* All bolded beta coefficients are at $p < 0.001$

The results show that positivity significantly predicts an optimistic view of the future ($\beta = 0.22$). Individuals with a positive experience will encounter the future with a higher level of optimism. Something similar occurs with the impact of the different systems of resilience on positivity. Individual resilience ($\beta = 0.36$), family resilience ($\beta = 0.21$), and community resilience ($\beta = 0.20$) predicted positivity. Furthermore, there were mediation effects as well; all the systems of resilience had a significant indirect impact on an optimistic view of the future through the mediation of positivity: individual resilience ($\beta = 0.32$), family resilience ($\beta = 0.38$), and community resilience ($\beta = 0.26$). These results suggest that fostering resilience across individual, family, and community domains, combined with a positive perspective, can enhance an optimistic view of the future even in the face of uncertainty.

Discussion and conclusions

While scholars recognize resilience as a broad and systemic feature that can help individuals adapt to and evolve with stressful situations and exceptional circumstances, our knowledge about the role that each system of resilience plays in how individuals face adversity is limited. The current study contributes to the field by enhancing our understanding of the impact different systems of resilience have

on both negative and positive experiences and how individuals foresee the future during a critical situation. To achieve this goal, through mixed methods, we utilized a free word association technique to detect individuals experiencing the stressful situation positively or negatively. Then we operationalized each system of resilience—individual, family and community—to finally analyze the impact that the different systems of resilience have on individuals' perception of the stressful circumstances, and how these influence the perceived future perspectives.

Our results suggest that the different systems of resilience are crucial to how individuals will face the future. Individual resilience plays a pivotal role in shaping both pessimistic and optimistic views of the future, with stronger resilience linked to less negative perceptions and greater optimism. While family and community resilience play stronger roles in fostering optimism but are less effective in mitigating negativity or pessimism. This suggests they might act as complementary systems to individual resilience, which has more direct impacts on negative experiences. Furthermore, individual resilience's ability to mediate the influence of negativity and positivity on future perspectives highlights its importance in navigating uncertain situations. Pursuing resilience across individual, family, and community systems, especially with a positive experience, enhances the likelihood of perceiving a more optimistic view of the future.

The contribution of this paper is threefold. This paper portrays a rich empirical analysis combining a mixed and multimethod approach. It combines free word associations with SEM, two different approximations of data that are hardly ever combined but that offer a complementary set to reinforce the analysis. In addition, instead of constructing resilience within a multidimensional system (see e.g. Distelberg et al., 2015, 2018), this paper scrutinizes the different systems of resilience separately to show each of their roles. In that sense, we argue that the closer the system is to individuals, the stronger the effect it has; that is, the micro-level system or individual resilience is a crucial system that provides individuals resources to confront the future and strategies to manage their attitudes during periods of crisis and uncertainty, thereby, better shaping their well-being. Family and community resilience work more as a subsidiary system to the other, driving hopefulness in critical times. Finally, our results illustrate the importance of working on resilience strategies from different systems. Even though in moments of adversity individual resilience can be considered the cornerstone of capacity to cope with difficulties, it is the one that can be most affected in challenging circumstances. Resorting to other strategies that are less internal and more interpersonal may help us to navigate the uncertainty better and help us foster greater confidence towards the future. That is, while individual resilience helps us to change our attitude and the future perspective by reducing the actual negativity and pessimism towards the future, the other systems of resilience also help us in boosting the optimism to the time to come. Therefore, this paper demonstrates the importance of considering the systems of which individuals are a part of as essential resources to steady wellness in critical times.

Even though this paper primarily focuses on a conceptualized empirical model, the findings may offer valuable insights for practical implications. The emphasis on family resilience as a key factor in fostering optimism suggests that therapeutic approaches should focus on enhancing family dynamics and communication during crises. Mental health professionals could integrate family-based therapy or interventions that strengthen family cohesion, especially in times of uncertainty. Individual resilience also plays a pivotal role, highlighting the need for personalized approaches, such as cognitive-behavioral therapy, aimed at fostering personal coping mechanisms and optimism, particularly for individuals struggling with pessimistic outlooks. Moreover, the study underscores the importance of community-based initiatives to promote collective resilience. Policymakers and community leaders could develop programs that encourage social support networks and strengthen community bonds, especially during societal crises like pandemics. Community resources, such as support groups and outreach

programs, could be critical in mitigating feelings of isolation and fostering a collective sense of hope and optimism.

Although the proposed model has shown significant findings, our study has some limitations that should be acknowledged. First, the cross-sectional design restricts our ability to infer causality and observe changes over time. Therefore, future research may focus on longitudinal studies to capture dynamic processes and enhance the generalizability of the findings. Second, the study's focus was limited to specific populations or systems that were affected by certain conditions. Future research could benefit from a more comparative approach, examining differences between affected and unaffected populations. This could be particularly useful in identifying nonlinear relationships or thresholds that might be missed when only considering one type of population. By contrasting these different groups, researchers could uncover unique adaptive strategies or vulnerabilities that emerge under varying levels of exposure to external disruptions. Third, while this study concentrated on the independent functioning of each system, it did not explore the interrelationships between them. Future studies adopting a systemic approach could investigate how different systems interact with one another and how disturbances in one system affect the adaptive capacities of other systems. Understanding these interactions would be important for developing more holistic models that account for system-wide resilience. Lastly, the study does not account for potential contextual factors or external variables that might influence the outcomes, such as economic, geographic or cultural differences. Future research should aim to incorporate these contextual factors to better understand the broader applicability of the findings.

In conclusion, the present study warns society of the importance of not working on the self exclusively but rather of working on interpersonal relations and community connections, as it is within a systemic context that we may find holistic strategies to better prepare us to confront future challenges and ensure a proper quality of life in the face of adversity. Indeed, the COVID-19 crisis has been a test of stress for all, hence, having evidences of what works as adaptive capacities is an effective way to be prepared for future adversities.

Acknowledgements Funding for this project was provided by *Santander Universidades* (IsFamily Chair located at UIC Barcelona). We thank the *Centro d'Ateneo Studi e Ricerche sulla Famiglia* at *Università Cattolica del Sacro Cuore* of Milan for providing us with a draft of a questionnaire to elaborate our own one.

Data availability The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethical approval All procedures performed in the study involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

Informed consent Informed consent was obtained from all individual participants included in the study.

Conflict of interest The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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