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Scientific Director Alessandro Zennaro

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The traumatic experience of Emilia-Romagna flood and its impact on Assumptions about the world, Time perspective, Eudaimonic well-being and gender

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✎ **ABSTRACT.** Lo studio ha approfondito l'impatto psicologico dell'alluvione della Romagna sulle persone dei territori coinvolti attraverso tre prospettive teoriche: la Teoria sulle Assunzioni sul Mondo, la Prospettiva Temporale, il Benessere Psicologico-eudaimonico. Hanno partecipato 131 soggetti delle zone alluvionate della Romagna. Emergono correlazioni positive tra le Assunzioni sul Mondo e la Prospettiva Temporale, e differenze significative per il genere ed il tipo di danno ricevuto. Le donne con danni sul lavoro autonomo appaiono meno fiduciose di poter controllare la situazione e presentano una maggiore percezione di casualità degli eventi accaduti.

✎ **SUMMARY.** *The study focused on the psychological impact of Romagna flood on people of the affected areas through three theoretical perspectives adopted: the Theory of World Assumptions; the Time Perspective and the Psychological-Eudaimonic Well-being. Evaluate these three dimensions in relation to whether or not they have experienced concrete personal and/or professional -work related harm, gender, school education, age. Significant differences were hypothesized between those who had experienced their types of harm compared to those who had not, even though they lived in the same area. 131 subjects from Romagna flooded areas participated in the study. The following questionnaires were submitted to the online Google Forms platform: Questionnaire on Assumptions on World; Zimbardo Inventory on Time perspective, PWB Questionnaire. Positive correlations were found between Assumptions about the World and Time perspective: Past negative, Present fatalistic and Future negative were negatively associated with Assumptions on the World, with the exception of the belief Randomness of events, with positive association. Psychological-Eudaimonic well-being appears positively associated with all Assumptions on World, with the exception of Randomness of events, where the relationship is negative. Significant differences emerge for gender and type of harm suffered. Self-employed women appear less confident in their ability to control the situation and exhibit a greater perception of Randomness in events. Gender differences also appear in Time perspective for work-related harm, with women exhibiting a more negative, pessimistic view of the future than men, along with a more fatalistic perception of their present. The study confirmed the negative impact of flood on the population. Particular attention is required for psychological support interventions to the population and for the greater vulnerability of female workforce in the face of loss of self-employed instruments.*

Keywords: *World assumptions; Flood; Time perspective; Eudaimonic well-being; Trauma; Emilia Romagna*

INTRODUCTION

In May 2023 two floods, fifteen days apart, hit the Italian region Emilia-Romagna causing deaths and serious damage to homes, work activities and local infrastructure. In the Romagna area 23 watercourses overflowed at the same time: hundreds of houses were flooded, many companies lost the resources with which to carry on their businesses. Life in the entire Romagna area was disrupted by the flood, which caused the destruction of railways, bridges, roads and generated landslides in the hilly area. The daily life of all the inhabitants of Romagna was suddenly turned upside down.

The gravity of the situation, the human and concrete losses can define this series of events as an authentic collective trauma. The personal experience lived by several of these inhabitants of damages and loss caused by the flood both at home and at work aggravated the traumatic experience of them.

A traumatic event of this magnitude can have profound impact not only on concrete life, but also on the psychological dimensions such as the cognitive representation of the world, the way to perceive the present, the planning for the future and the well-being, with potential effects not only in the present, but also, and perhaps more important, in the long run.

Traumatic events and Assumptions about world

The term *trauma* derives from the classical Greek and indicates a wound, a psychic laceration. Modern psychology defines a traumatic event as “a strongly negative event that generates a real emotional and biographical fracture in the individual and/or in the community, such as to undermine the sense of stability, security, identity and physical and psychological continuity of the person or persons who find themselves facing it (APA, 2013; Ursano, Mc Coughy & Fullerton, 1994).

A fundamental distinction that is commonly made, but which in contemporary society, thanks to technological progress, tends to become blurred and increasingly difficult, is between disasters from nature (natural disaster), such as an earthquake, a flood, a tornado, and disasters caused by humans (man-made disaster; Weisaeth, 1994) as this distinction translates into a very different collective

representation of the event, and gives rise to equally different emotional and behavioral reactions. As stated Weisaeth, “manmade disasters are said to be more traumatic because of their unfamiliarity, unpredictability, uncontrollability and culpability” (p. 76). A flood, typically a natural disaster, can be understood as not completely natural, but with the unintentional compliance of humans, due to the lack of care and maintenance of the territory on a hydrogeological level (Da Deppo, 2016). This blended causal attribution can have relevant impact on the cognitive and emotional reactions to the flood, increasing the probability to experience emotions such as anger, indignation, and other emotions that pertain to the inner experience of losses caused by humans, and not by only nature itself. For this reason, a natural disaster, in our contemporary, technological society, can lead people to consider the event as nature-made but with the lack of compliance by man for preventive measures, with consequent emotional and cognitive responses.

The sociocognitive approach on traumatic events recognizes the relevance of cognitive schemas of individuals about the world and themselves. Parkes (1975) firstly introduced the term assumptive world to refer to a “strongly held set of Assumptions about the world and self which is confidently maintained and used as a means of recognizing, planning and acting [...] these Assumptions are learned and confirmed by the experience of many years” (p. 132). Another relevant theory is the world models elaborated by Bowlby within his perspective on human attachment (1988).

Within these models, Janoff-Bulman’s (1989, 1992) theory of shattered Assumptions has been one of the most accepted and utilized models for deepening the psychological impact of traumatic events upon victims. The theory hypothesizes that traumatic events produce changes in the victim’s thoughts and beliefs. According to the social cognition perspective, individuals hold certain Assumptions or schemas regarding the world and self, which are stable and generally positive (Epstein, 1985). A traumatic event presents information that is incompatible with these existing schemas (Horowitz, 1975).

Janoff-Bulman postulated several Assumptions that most individuals have about themselves and the world around them. For J-Bulman these Assumptions are rooted in early experiences, and also in later life experience. Primarily, there are three broad fundamental assumptions; the world is benevolent, the world is meaningful, and the self is worthy (Janoff-Bulman, 1992, p. 6). Each of the three

core Assumptions in the assumptive world can be broken down into sub-category assumptions. She postulated eight primary assumptions: benevolence of the world; benevolence of people; Justice; Controllability; Randomness; Self-controllability; Luck; Self-worth. These Assumptions are seriously challenged after a traumatic event, both individual or collective.

The world as a benevolent place can be broken down to mean that the world is a safe environment (compared to seeing the world as a hostile, malevolent one) and others are decent and caring individuals, which parallels how we would tend to view ourselves (Janoff-Bulman, 1992). The world as a meaningful place involves the individual concepts that there is a reason for everything that happens to a person as well as bad things happen only to dishonest people (the notion that the 'world is a just place to live in'; Janoff-Bulman, 1992). An additional part of the assumption of the world being meaningful is the concept that the world is not a random place. If there is mostly Randomness in the world, then there can be no underlying meaning behind the events that may befall us (e.g. a traumatic event) (Janoff-Bulman, 1992). The assumption of Self-worth is how we, as individuals, see ourselves as kind, moral, capable and deserving of good things to happen as a reward for our abilities. It is hypothesized that these three core world Assumptions are not directly challenged, but instead they change gradually during life and the accumulation of experience. A traumatic event, on the contrary, can suddenly disrupt these assumptions, setting into motion dramatic changes about one's self, the world and the other persons, this can lead to negative outcomes such as cynicism and depression. Juxtaposed to these minor challenges, the nature of a traumatic event calls into question the basic core Assumptions of meaningfulness, benevolence, and Self-worth. The onslaught of contradictions to the assumptive world can shatter the framework of how the individual perceives the world around them as well as their views of the self (Janoff-Bulman, 1992). A study conducted by J-Bulman (1992) on 338 undergraduates highlighted that those students who experienced serious negative events (such as death of a parent, rape, fire that destroyed their home, incest) defined as victims, differ from the non-victims for several Assumptions about world (Self-worth and Benevolence of world). Gender emerged as a relevant factor: male victims believed in chance more than their female non victim counterparts. The study reveals that also even years after the negative event the victims show a higher level of depression than non-victims, males

fared worse than female victims, confirming the crucial role of long-term processes that are set in motion after a traumatic event and the relevance of these (shattered) schemata.

This hypothesis has been supported by various studies revealing that victims of several traumatic events express more negative world Assumptions than non-victims (Dekel, Solomon, Elklit & Ginzburg, 2004; Janoff-Bulman, 1989; Solomon, Iancu & Yano, 1997).

Several studies conducted on victims of floods examined the role of structural variables such as gender and age, the level of damage reported, and psychological variables connected to quality of life after this event and in a life-span perspective.

Chen and Liu (2015) investigated, through a longitudinal research design, the percentage of people invested by the flood in Hunan, China, and the predictors of this adverse outcome. Flood victims who had higher disaster stressors (e.g. loss of income) and lower social support were most likely to have a worse PTSD prognosis. Nygaard and Heir (2012) in a longitudinal study conducted on Norwegian victims of the tsunami occurred in Indonesia during the year 2004 confirmed that after two years from the event the Assumptions on world change in a worse way for the Controllability, the predictable world, the just world and the invulnerability. On the other hand, the participants reported a strengthening of their Assumptions of life as meaningful and being a valuable human, highlighting a possible post-traumatic Personal growth. In the study of Nygaard and Heir (2012) perceived changes in world Assumptions were marginally related to later post-traumatic stress symptoms but significantly related to later quality of life. There were some differences in associations between world Assumptions and the two outcomes reported. Whereas reported negative perceived changes in the assumption 'the world is just' were related to worse outcomes in both quality of life and post-traumatic stress symptoms, only quality of life was related to perceived changes in 'life is meaningful' and the 'feeling that I am a valuable human' (Self-worth).

Bokszczanin (2007) examined the predictors of post-traumatic stress disorders in a sample of adolescents and young people 28 months after the 1997 flood in Poland. Gender resulted a significant predictor of post-traumatic stress disorder: females were more at risk than males for developing it in the long run. Rodrigues-Munoz and colleagues (Rodriguez-Munoz, Moreno-Jimenez, Sanz Veergel & Garrosa, 2010) found, in a study on victims of

workplace bullying, that women show more post-traumatic symptoms and more negative beliefs about world than men.

The disruption of the Assumptions about world could be, for these reasons, relevant predictors of negative psychological outcomes in the long run. Firstly, since they will be rebuilt with more negative perspectives on people and causal inferences for events that could occur in the future; than, for their potential influence on the way people perceive and represent their Time perspective. A traumatic event indeed that in turn back the Assumptions on world can impact also the elaboration of it, the past remembering, the way of living in the present and especially the way to represent the future.

Time perspective and the impact of traumatic events

Traumatic events, due to their nature of unpredictability, uncontrollability and negativity, have a strong impact on human temporality (Sword, Sword, Bruskill & Zimbardo, 2014; Zimbardo, Sword & Sword, 2012). In particular, Time perspective, defined as the partition of the biographical time flow into past, present and future times with the aim of assigning order and coherence to events (Zimbardo & Boyd, 1999) can be impacted by traumatic events, individual or collective ones. The Time perspective originally was elaborated as composed by five dimensions: Past positive (a positive view of the past, that is considered as bearer of values, positive relationships and positive models of human relationships); Past negative (a vision of the past as a time with negative events not yet elaborated, the presence of painful experiences); Present fatalistic (a vision of the present as a time outside of any personal control); Present hedonistic (living in the present savoring the experiences coming from friends, but also taking risks for the desire of sensation seeking); Future positive (the presence of Life projects, and the possession of resources and strategies for accomplishing them). Carelli and colleagues (Carelli, Wiberg & Wiberg, 2011) recognized that the lack of two dimensions of future create an unbalanced time organization; for this reason, Future negative (the envisioning of a threatening, anxious, boring future) was added as a new dimension, symmetrical to Future positive.

Individual differences in Time perspective orientation influence our actions across a variety of life domains, such as health behaviours (Daugherty & Brase, 2010); risk taking

(Jochemczyk, Pietrzak, Buczkowski, Stolarski & Markiewicz, 2017; Zambianchi, Ricci Bitti & Gremigni, 2010); romantic relationships (Stolarski & Matthews, 2016) or aggression, psychological well-being and social well-being and also, in old age, wisdom (Zambianchi, 2016; 2020).

A traumatic event, indeed, if not processed, can become something that cannot be placed in the past, thus compromising not its denial, but its location in a temporal zone distinct from the present and the future. This failure to deliver the event to the past can bring with it the risk of pervasively influencing the present through intrusive memories, avoidance of experiences that concretely or symbolically remind us of it, difficulty concentrating, negative vision of the future.

Holman and colleagues (Holman, Michael Jonaes, Garfin & Silver, 2023) studied the time distortion and or disintegration of time (having no future; disruption of daily routine) during the traumatic event of Covid-19 pandemic, founding a profound impact of this collective trauma on temporality, where people felt to have not a future, with women reporting more time disintegration than men. Considering the centrality of the future time for Life projects and well-being (Lewin, 1943; Sword et al., 2015) the absence of future planning and projects can be seen as a very negative outcome of this trauma.

Tufan and Bayraktar (2020) conducted a study on Cyprus adult people which have lost their parents during the conflict between the Greek and Turkish Cyprus population (1963-1974) and confronting them with people who didn't lose parents for the Time perspective and PTSD symptoms. They found that PTSD was transmitted to children by the survivors and also the Time perspective configuration. Moreover, Past negative and Present fatalistic, two problematic time dimensions, were associated with the presence of PTSD symptoms, suggesting the authors that traumatic events can disrupt the Time perspective schemata and also, perhaps, the Assumptions on world as described by J-Bulman model.

Reconnecting these studies on Time perspective to the shattered world Assumptions model by J-Bulman, we could hypothesize that Time perspective may be in relation with these Assumptions about the world. As stated by Bulman about the early constructions of them and also recognizing their temporal qualities (e.g. believing in the Controllability of the events can directly lead to the question of the fatalistic or viceversa under control view of the present; fortune can

be related to the past events; those who experienced Lucky situations for job, for relationships, they can strengthen a positive view of personal life; Randomness of events can be related to a negative envisioning of the future, without any personal proactive action for shaping it in a desired manner).

We can then hypothesize that past experiences, positive or negative, contribute to the early construction of these core assumptions, which are in turn strengthened or shattered by the subsequent events people are faced with, including trauma.

But, as other research demonstrated, the traumatic events can give life to psychological processes that lead, during time, to a positive re-evaluation of life dimensions or values, or to an authentic post-traumatic growth, that can be seen as a facet of resilience.

Growing through trauma: The presence of life projects and personal growth as hallmarks of resilience

Positive psychology recognizes that mental health and well-being are not related to the mere absence of maladjustment, but, instead, to the presence of a sufficient life-quality, to the presence of positive emotions, to the presence of purpose in life, a sense of openness to experiences and Personal growth through life (Ryff, 2014; Ryff & Singer, 2008).

Recently, researchers are increasing attention to protective factors that decrease the likelihood of distress and pathological outcomes in trauma survivors (e.g., hardiness, social support: King, King, Fairbank, Keane & Adams, 1998; sense of coherence: Frommberger et al., 1999; hope: Crowson, Frueh & Snyder, 2001; Irving, Telfer & Blake, 1997; Long et al., 2015). Among these, the psychological Eudaimonic well-being can be, for its focus on development and growth in personality and maturation (Ryff, 2023) a relevant index of protection against adverse outcomes following a traumatic event.

Literature on resilience and post-traumatic growth has found indeed that some trauma survivors not only report negative outcomes, but also report positive outcomes such as enhanced social relationships and a renewed sense of meaning in life (Matheson, Asokumar & Anisman, 2020; Tedeschi & Calhoun, 2004; Tedeschi, Cann, Taku, Senol-

Durak & Calhoun, 2017; Tedeschi, Park & Calhoun, 1998).

Post-traumatic growth (PTG), the hypothesis that people can undergo positive psychological changes as a result of adversity, has been a key topic of research by psychologists over the last 25 years (Brady & Jayawickreme, 2023; Infurna & Jayawickreme, 2019), but with difficulty in finding common criteria and definition of what we can understand and define as growth itself. Several authors (Boals, 2023; Frazier et al., 2009) indeed show greater caution or even skepticism about the post-traumatic growth as a common experience after a traumatic event, hypothesizing, on the contrary, this kind of outcome be very rare in the population.

The PTGI conceptualizes growth in terms of five categories or life domains: new possibilities, relating to others, personal strength, appreciation of life, and spiritual growth (Brady & Jayawickreme, 2023; Tedeschi & Calhoun, 1996; Tedeschi et al., 2017). Peterson and Seligman (2004) elaborated a model on positive human qualities, defined as the 'virtues and strength model'. These dimensions are not at the opposite side of suffering, but instead they can be present despite the adverse situations and promote, in the long run, a better psychological and psycho-social adjustment. Among these strengths are purpose (the presence of projects in life), Self-control, open-mindedness (near the concept of Personal growth) and fairness (near the J-Bulman's concept of Justice). The studies on human well-being elaborated by positive psychology identified different components of well-being, that are interrelated (see the concept of human flourishing; Keyes, 2007), but distinct, with specific features.

One of the major distinctions is between hedonic well-being (the presence of high level of life satisfaction and positive emotional tone (Ryan & Deci, 2001) and Eudaimonic well-being, related instead of the human tension toward realization of self (Ryff, 1989).

Ryff (1989; Ryff & Singer, 2008; 2023), referring to the Greek philosopher Aristotle, defined well-being in a Eudaimonic key as the development of talents and potential of the individual for the benefit of society, conceptualizing it in a model composed of six dimensions: self-acceptance (accepting the positive and negative qualities of oneself); positive relationships with others (the presence of stable relationships based on mutual trust); autonomy (knowing how to decide on the basis of one's own value scheme and knowing how to resist social pressure to comply); environmental mastery (knowing how to identify the resources suitable for one's development and knowing how to move forward; purpose in

life (the presence of future plans); Personal growth (feeling of growing as a person at any life-stage). Several studies have been able to confirm the relevance of Eudaimonic well-being throughout life, its protective capacity against stress (Ryff, 2014) in old age, for positive mental health (Ryff, 2023), its relationship with future-oriented temporality (Zambianchi, 2021), with creativity of daily problem solving in young people (Zambianchi, 2019). The Eudaimonic perspective on psychological, individual well-being, emerges as a growing factor not only for positive mental health but also for biological state (Ryff, 2014; 2023). Ryff highlighted the role exerted by eudaimonia on positive mental health also during the Covid-19 pandemic, being the Eudaimonic well-being recognized as a factor of growing interest for the studies on positive outcomes after a traumatic event, both individual and collective (Allen et al., 2014; Kashdan, Uswatte & Julian, 2006). Scignaro, Bianchi and Brunelli (2015) highlighted the role of Eudaimonic well-being in promoting mental health in a group of cancer patients. Moreno, Dooley and Bower (2018) in a study on breast cancer survivors confirmed the role of Eudaimonic well-being, defined as meaning and purpose in life for the post-traumatic growth after the diagnosis. Martinez-Zelaya and colleagues (Martinez-Zelaya, Bilbao Ramirez & Paez Rovira, 2022) found that negative events are weakly associated with Ryff's Eudaimonic well-being, while Cho and Park (2013) highlighted that the Eudaimonic dimensions Personal growth can be improved by negative events, learning about one's capacity and personal strengths Li and colleagues (Li, Luo, Yan & Liang, 2023) evidenced, in a study on Chinese young adults with childhood adversities, that the Eudaimonic well-being was positively associated with post-traumatic stress disorder, making the authors hypothesize this positive association between Eudaimonic well-being and PTSD symptoms may be a manifestation of post-traumatic growth.

The presence of Life projects can be considered as an element of resilience as critical events generally reduce hope in the future and reduce motivation to develop projects. As highlighted in studies on temporality (Holman et al., 2023), the experience of a traumatic event can upset everyday life, leading to a readjustment of future prospects and life plans. For this reason, the ability to keep a life plan open despite a traumatic event can be considered not only a protective factor but also an indicator of resilience (Nugent, Sumner & Amstadter, 2014). At the same time, another dimension considered central in the Eudaimonic perspective, Personal

growth, can be an important index, or criteria, of personal development capacity through the processing of a traumatic event.

Referring to the above mentioned studies, we can hypothesize that the experience of flood can undermine the level of psychological Eudaimonic well-being, but also that some people can experience Personal growth through this traumatic event, thinking in depth to the meaning of the experience, and remain open to positive evolution and projects in life.

Objectives

The study had three fundamental objectives.

- The first objective of the study pertained to the exploration and description of the sample in relation to the following three factors: Assumptions on world, Time perspective and Eudaimonic psychological well-being; (O1).
- A second objective concerned the evaluation of the associations between the Assumptions about world, Time perspective and Eudaimonic-psychological well-being and its covariations with age; (O2).
- A third objective concerned the evaluation of the effects of personal and/or work damages received on Assumptions on world, Time perspective and Eudaimonic psychological well-being. structural variables gender, and school education have been also explored for their effects on Time perspective, Assumptions about world and Eudaimonic-psychological well-being in their interaction with having had or not damages due to the flood; (O3).

Hypotheses

On the basis of the above-mentioned objectives, after examining the characteristics of the sample with respect to the three factors (O1) and their associations with participants' age (O2), the study tested the following hypotheses.

- Evaluate the correlations among the Assumptions about the world, the Time perspective and the Eudaimonic well-being. Significant correlations are expected between these three factors (H1).
- Regarding the second objective (O2), correlations between age, treated as a continuous variable, and the three factors - Assumptions on the world, Time perspective,

and Eudaimonic well-being -were examined. Significant residual correlations were expected among the three factors themselves, as well as between age and each of these factors (H2).

Although there are no studies on the specific relationships between Time perspective and Assumptions on world, on the bases of the literature on t.p. and traumatic events (Tuftan & Bayraltat, 2020) it was hypothesized that Past negative is negatively correlated with the following Assumptions about world: Justice, personal control over events, benevolence of people and benevolence of the world. Past positive is expected to correlate positively with the following Assumptions about the world: Justice, Luck, benevolence of the persons and of the world; Present fatalistic is expected to correlate negatively with Benevolence of persons and of the world, with Controllability of events, with Self-control, as Assumptions about world. Future positive is expected to correlate positively with Benevolence of persons and of the world, with Justice, with Self-worth as Assumptions about world. Future negative is expected to correlate negatively with the following Assumptions about the world: Justice, with Benevolence of persons and of the world, with Self-worth, with Controllability of event. On the basis of the literature (e.g. Li et al., 2023; Ryff, 2023), Eudaimonic well-being is expected to correlate positively with all the positive Assumptions about world, and negatively with the assumption Randomness of events. Eudaimonic well-being is also expected to correlate positively with Past positive, Present hedonistic and Future positive; on the contrary, it is expected to correlate negatively with Past negative, Present fatalistic and Future negative. On the basis of previous literature (e.g. Ryff, 2014; Ryff & Singer, 2008; Zambianchi, Ronnlund & Carelli, 2019) it was hypothesized that as age increases, level of Personal growth decreases; Present hedonistic decreases as age increases.

- Explore the differences on these above mentioned variables on whether or not there were damages on personal properties such as furniture, car, living home and on professional instruments such as PC, equipment for business/company, shops, agriculture. These two different type of damages has been explored separately. Differences for structural variables: age, gender and school education and their interaction effects have also been explored. It was expected, on the basis of previous literature (Dekel

et al., 2004; J-Bulman, 1992) that those who had damages at personal and at professional level show lower level of positive Time perspective dimensions (Past positive, Future positive) but higher level of negative temporal dimensions (Past negative, Present fatalistic, Future negative). It was also expected lower levels of positive Assumptions on world (Justice, Benevolence of persons and of world, Controllability of events) than those who did not experience loss and damage (H3).

METHOD

Sample

131 subjects (M age 50.62, $SD = 14.87$; range: 19-84, 41 males and 90 females, with 8 missing data; 6 with Middle school diploma; 60 with High school diploma, 65 with degree) participated in the study. Of these, 56 (43%) reported having had damages to personal things (e.g. home, furniture, car) due to the flood; 29 (22 %) reported having had work damages (e.g. PC, shop equipment) due to the flood.

They were recruited through personal acquaintances, messages through a local journal (Corriere di Romagna), Commerce associations, University, Municipalities of Romagna. The institutions, the local journal and the University that participated in the study uploaded the link of the self-report instruments in their websites, explaining the main objects of the study and its anonymity, in compliance with the privacy law that guarantees the anonymity of data.

Procedures

Research started in June 2023, exactly one month after the flood, using Google Forms Platform. Through a specific link it was possible to open the online module with the self-report questionnaires. Before filling then in, on the head string that precedes the questionnaires, the study was briefly presented, its objectives described and the anonymity of the response. The study was conducted through recruitment online only, due to the overwhelming difficulties in reaching people in flooded areas (e.g. bridges and roads blocked or damaged, mud and slime in the houses). Furthermore, it was specified that only people residing in the flooded areas of Emilia-Romagna (Union

Municipality of the Bassaromagna, Union of Municipality of the Romagna Faentina, city of Ravenna, cities Forlì-Cesena and surroundings areas) could participate in the study. Subsequently, after having read these informations included in the head string of the online questionnaire, immediately after opening the link, the participants could continue and fill out the questionnaires. The application required the participation of adults only. The Google Moduli Platform remained active until August 31, 2023.

Instruments

The participants filled in the following self-report questionnaires:

- The *Worlds Assumptions Scale* (J-Bulmann, 1992). This questionnaire is composed by 32 items and 8 sub-components: Justice (e.g. of item: "People will experience good fortune if they themselves are good", $\alpha = .70$); Benevolence of persons (e.g. of item: "Human nature is basically good", $\alpha = .71$); Benevolence of the world (e.g. of item: "There is more good than evil in the world", $\alpha = .86$); Controllability (e.g. of item: "If people took preventive actions, most misfortune could be avoided", $\alpha = .73$); Luck (e.g. of item: "I am basically a Lucky person", $\alpha = .84$); Randomness (e.g. of item: "The course of our lives is largely determined by chance", $\alpha = .66$); Self-worth (e.g. of item: "I am very satisfied with the kind of person I am", $\alpha = .84$); Self-control (e.g. of item: "I usually behave in ways that are likely to maximize good results for me", $\alpha = .58$). The evaluation scale was a five-points Likert scale (1 = not true at all; 5 = completely true).
- The *Time perspective Inventory – Short form* (Klicperova, Luvavska & Lukavsky, 2015). This questionnaire, that represents a short form of the S-ZITPI (Carelli et al., 2011) is composed by 18 items and six time dimensions (three items for each component of the scale): Past negative (e.g. of item: "I think about the good things that I have missed out on in my life", $\alpha = .78$); Past positive (e.g. of item: "Familiar childhood sights, sounds, smells often bring back a flood of wonderful memories", $\alpha = .75$); Present fatalistic (e.g. of item: "Since whatever will be will be, it doesn't really matter what I do", $\alpha = .62$); Present hedonistic (e.g. of item: "It is important to put excitement in my life", $\alpha = .76$); Future positive (e.g. of item: "I complete projects on time by making steady progress", $\alpha = .61$); Future negative (e.g. of item: "To think about my future make me sad", $\alpha = .73$). The evaluation scale was a five-points Likert scale (1 = very false; 5 = very true).
- The *Psychological Well-being Questionnaire (PWB)* (Ruini, Ottolini, Rafanelli, Ryff & Fava, 2003; Ryff & Keyes, 1995). It has been chosen, for the present study, two components among the six of which it is composed: Personal growth (the individual's perception of being a growing and expanding person, e.g. of item: "I think it is important to have new experiences that challenge how you think about yourself and the world", $\alpha = .80$) and Life projects (have a clear comprehension of life purpose, a sense of directedness and intentionality, e.g. of item "Some people wonder aimlessly through life, but I am not one of them", $\alpha = .77$). The evaluation scale was a six-points Likert scale (1 = very much in disagree; 6 = very much agree).

Statistical plan

The statistical analyses were run in three steps. In the first step, for the description of the sample, means, standard deviations, skewness and kurtosis of the variables assumption about world, Time perspective and Eudaimonic well-being were calculated.

After, as second step, having these three variables a normal, Gaussian shape, Pearson's correlation matrices had been run in order to evaluate the associations between the study factors Assumptions on the world, Time perspective and Eudaimonic well-being. Age as continuous structural variables has also been explored in relation to these three study variables through correlational analysis.

In the third step a set of general linear models were run for evaluating the differences for grouping variables gender, level of school education and their interaction with having had or not personal damages and professional damages due to the flood on world assumptions, Time perspective and Eudaimonic well-being. The two structural variables about flood damages have been posed as dichotomous variables (yes personal damages; no personal damages; yes professional damages; no professional damages). General linear model was chosen due to the possibility to test the interaction of the structural variables on the dependent variable, resulting in a more detailed model of explanation. One of the main purposes of the study was indeed to verify the changing

in Assumptions about the world, Time perspective and Eudaimonic well-being due to the flood experience on people that experienced damages confronted with those who did not have this experience (damages on personal things and damages on professional things). The internal consistency reliability (Cronbach Alpha) was obtained for all dimensions of shattered Assumptions about the *World Scale*, *Time perspective Inventory* and *Psychological Eudaimonic Well-being Questionnaire (PWB)*.

All the statistical analyses were performed through the STATISTICA 7.0 program (licensed StatSoft).

RESULTS

Characteristics of the sample for the study variables Assumptions on world, Time perspective, Eudaimonic well-being

The whole sample of participants show higher scores on Past positive and Future positive, compared to negative time dimensions such as Past negative and Future negative. For the Assumptions about the world, stands out the very low score of Justice. Purpose in life and Personal growth show medium-high scores (see Table 1).

Table 1 – Characteristics of the sample for study variables

| Variables | Mean | SD | Min | Max | Skewness | Curtosis |
|------------------------|------|-----|------|------|----------|----------|
| Past negative | 3.13 | .99 | 1.00 | 5.00 | -.12 | -.80 |
| Past positive | 3.64 | .81 | 1.00 | 5.00 | -.59 | .45 |
| Present fatalistic | 2.31 | .81 | 1.00 | 5.00 | .58 | .25 |
| Present hedonistic | 2.82 | .95 | 1.00 | 4.66 | -.17 | -.68 |
| Future positive | 3.89 | .66 | 2.00 | 5.00 | -.58 | .46 |
| Future negative | 2.39 | .90 | 1.00 | 4.66 | .27 | -.74 |
| Justice | 2.10 | .64 | 1.00 | 4.00 | .47 | .08 |
| Benevolence of persons | 3.14 | .59 | 1.00 | 4.50 | -.71 | .89 |
| Benevolence of world | 2.70 | .74 | 1.00 | 5.00 | .07 | .57 |
| Randomness | 2.73 | .68 | 1.00 | 4.66 | .46 | .30 |
| Controllability | 2.56 | .64 | 1.00 | 4.50 | .28 | .45 |
| Luck | 2.88 | .70 | 1.00 | 5.00 | .23 | .48 |
| Self-control | 3.12 | .53 | 2.00 | 4.50 | .45 | -.01 |
| Self-worth | 3.84 | .67 | 1.50 | 5.00 | -.52 | .31 |
| PWB life projects | 4.27 | .75 | 1.90 | 5.60 | -.63 | .18 |
| PWB personal growth | 4.76 | .71 | 2.70 | 6.00 | -.65 | .14 |

Correlations between world Assumptions and Time perspective

The majority of world Assumptions appears to be negatively correlated with Past negative, Present fatalistic and Future negative. Justice, Luck and Self-worth are positively correlated with Past positive. Luck is the only assumption that highlights a significant and positive correlation with Present hedonistic. Controllability of events, Benevolence of world, Self-control and Self-worth appear to be positively correlated with Future positive (see Table 2).

Correlations between Assumptions about the world and Eudaimonic well-being

All the world assumption, with the exception of Randomness, appears to be positively and significantly correlated with Life projects. Personal growth is positively correlated with Benevolence of persons, Controllability, Benevolence of world, Luck and Self-worth. It appears to be negatively correlated with Randomness (see Table 3).

Table 2 – Zero order correlations between Assumptions about the world and Time perspective

| Variables | Justice | Benevolence persons | Randomness | Controllability | Benevolence world | Luck | Self-control | Self-worth |
|--------------------|---------|---------------------|------------|-----------------|-------------------|--------|--------------|------------|
| Past negative | -.12 | -.33*** | .30*** | -.24** | -.38*** | -.28** | -.15+ | -.53*** |
| Past positive | .18* | .15+ | -.03 | .10 | .16+ | .31** | .12 | .23* |
| Present fatalistic | -.16+ | -.32*** | .60*** | -.18* | -.27** | -.20* | -.13 | -.43*** |
| Present hedonistic | .03 | -.12 | .20* | -.07 | -.04 | .04 | .10 | -.12 |
| Future negative | -.13 | -.46*** | .45*** | -.18* | -.48*** | -.26** | -.25** | -.72*** |
| Future positive | .03 | .13 | -.16+ | .20* | .24** | .10 | .32*** | .47*** |

+ $p < .06$; * $p < .05$; ** $p < .01$; *** $p < .001$

Table 3 – Zero order correlations between dimensions of Eudaimonic well-being and Assumptions about the world

| Variables | Justice | Benevolence persons | Randomness | Controllability | Benevolence world | Luck | Self-control | Self-worth |
|-----------------|---------|---------------------|------------|-----------------|-------------------|--------|--------------|------------|
| Life projects | .18* | .40*** | -.33*** | .22** | .44*** | .44*** | .38*** | .71*** |
| Personal growth | .15+ | .42*** | -.32*** | .19* | .44*** | .19* | .17+ | .50*** |

+ $p = .08$; * $p < .05$; ** $p < .01$; *** $p < .001$

Correlations between Time perspective and Eudaimonic well-being

Life projects appear to be positively correlated with Past positive, Present hedonistic and Future positive, while it shows negative correlations with Present fatalistic and Future negative.

Personal growth shows positive correlations with Past positive, Present hedonistic and Future positive, negative correlations with Past negative, Present fatalistic, Future negative (see Table 4).

Correlations between age and study variables Assumptions about world, Time perspective and Eudaimonic well-being

Age shows positive correlation with the assumption Benevolence of persons. Negative correlations has been found between age, Present hedonistic and the assumption Luck (see Table 5).

School education effects on Assumptions about the world, Time perspective and Eudaimonic well-being

For school education the only effect has been found on Life projects ($F_{(2,126)} = 2.94; p < .05$). middle school diploma: $M = 4.30$ ($SD = .57$)^{1 2}; high school diploma: $M = 4.07$ ($SD = .84$)¹; degree: $M = 4.45$ ($SD = .64$)²; Tukey test $p > .01$; Unequal N HSD $p > .01$.

Consider that ¹ = Cohen's delta = .3; ² = Cohen's delta = .6.

GLM models: The effects of grouping variables gender and school education on the Assumptions about the world, Time perspective and Eudaimonic well-being

Assumption on world Justice

Justice evidences a difference for damages on professional activities in interaction with gender ($F_{(1,124)} = 5.01; p < .05$). Men with theses damages show a higher level of Justice than men without them; on the contrary, women with damages for work show lower level of Justice than women without them. Men with damages: $M = 2.52$ ($SD = .67$)^{1 2}; men without damages: $M = 1.99$ ($SD = .62$)¹. Women with damages: $M = 2.00$ ($SD = .69$)²; women without damages for work: $M = 2.10$ (.60) (see Table 6).

Consider that ¹ = Cohen's delta = .8; ² = Cohen's delta = .7.

Assumption on world Controllability of events

Controllability of events highlights a significant difference both at general level, and in interaction with gender for work damages due to flood.

Men as whole sample show higher level of control upon the events than women (men $M = 2.80$, $SD = .63$; women $M = 2.45$, $SD = .61$). $F_{(1,124)} = 10.77; p < .001$; Tukey test $p > .01$; Unequal N HSD $p > .01$; T -test: T -value 2.92; $df = 127; p > .01$; F -ratio variance 1.06; Cohen's delta = .6.

Table 4 – Zero order correlations between dimensions of Eudaimonic well-being and Time perspective

| Variables | Past negative | Past positive | Present fatalistic | Present hedonistic | Future positive | Future negative |
|-----------------|---------------|---------------|--------------------|--------------------|-----------------|-----------------|
| Life projects | -.32*** | .31*** | -.45*** | .04 | .30*** | -.72*** |
| Personal growth | -.44*** | .18* | -.34*** | .07 | .45*** | -.55*** |

* $p < .05$; *** $p < .001$

Men with damages on work structures show higher level of Controllability upon events than those without damages. Men with damages $M = 3.13$ ($SD = .61$)¹; men without damages $M = 2.67$ ($SD = .60$)¹. Women with work damages $M = 2.41$ ($SD = .72$); women without damages $M = 2.46$ ($SD = .59$). $F_{(1,124)} = 3.37$; $p = .06$ (see Table 7).

Consider that ¹ = Cohen's delta = .7.

Assumption on world Randomness

Randomness of events also shows differences for work damages in interaction with gender. $F_{(1,124)} = 3.79$; $p < .05$. Men without damages show lower level of Randomness than men with work damages. Men with damages $M = 2.75$ ($SD = .78$)¹; men without damages $M = 2.94$ ($SD = .56$). Women with work damages $M = 3.11$ ($SD = .67$)¹; women without them $M = 2.77$ ($SD = .56$) (see Table 8).

Consider that ¹ = Cohen's delta = -.4.

Assumption on world Self-worth

Self-worth shows differences both for work damages, approaching significance ($F_{(1,123)} = 2.97$; $p < .08$) and personal damages ($F_{(1,123)} = 6.55$; $p < .01$) due to flood.

For work damages men with damages show higher level of Self-worth than those without it. Men with damages $M = 4.06$ ($SD = .72$)¹; men without them $M = 3.78$ ($SD = .69$). Women with work damages $M = 3.60$ ($SD = .71$)¹; women without them $M = 3.88$ ($SD = .64$) (see Table 9).

Consider that ¹ = Cohen's delta = .6.

For personal damages there is a significant difference on Self-worth for the whole sample, without gender distinction ($F_{(1,123)} = 6.55$; $p < .01$). People without personal damages $M = 3.74$ ($SD = .64$); people with damages $M = 3.97$ ($SD = .69$). Tukey test $p > .05$; Unequal N HSD $p > .06$; T -test: T -value = -1.98; F ratio variance = 1.14; Cohen's delta = .3.

Time perspective: Present fatalistic

Present fatalistic shows approaching significance differences for work damages in interaction with gender ($F_{(1,124)} = 3.09$; $p < .08$). Men with damages $M = 2.09$ ($SD = 1.01$); men without them $M = 2.26$ ($SD = .87$). Women with damages $M = 2.58$ ($SD = .81$); women without them $M = 2.25$ ($SD = .84$). Cohen's delta = -.3 (see Table 10).

Time perspective: Future negative

Future negative highlights significant differences for work damages in interaction with gender ($F_{(1,125)} = 6.03$;

$p < .01$). Men with damages $M = 2.00$ ($SD = 1.03$)¹; men without them $M = 2.44$ ($SD = .84$)¹. Women with damages $M = 2.84$ ($SD = .98$)²; women without them $M = 2.32$ ($SD = .85$)² (see Table 11).

Consider that ¹ = Cohen's delta = .4; ² = Cohen's delta = .5.

No differences for personal damages have been found on Future negative ($p = .15$), Future positive ($p = .48$), Present hedonistic ($p = .79$), Present fatalistic ($p = .16$), Past negative ($p = .15$), Past positive ($p = .30$).

For Eudaimonic well-being no differences emerged for gender, personal and work damages and in the interaction with gender differences on both the dimensions.

DISCUSSION

For the description of the group of participants in the study on the three variables taken into consideration, it shows, starting with Assumptions about world, that they believe quite a bit in the benevolence of people but less in the benevolence of the world. The score on Justice, however, appears to be very low: in fact, these people do not believe that virtuous behaviours will bring those who adopt them rewards or in any case recognition of the positive values they embody, demonstrating a reduced perception of Justice in the society in which they live. The perception of being able to control events appears to be of a medium-low level, while the belief in the Randomness of what happens is a little higher. The Time perspective appears oriented towards a positive vision of the future, with average scores on both the Past positive and the Past negative. There remain Life projects, the score of which appears to be medium, while the feeling of growing as a person seems to be higher.

The correlations that emerged in the study show how Assumptions about the world are linked to the Time perspective, an aspect that seems to suggest the hypothesis of the contribution both of early life experiences and more recent events to its genesis. The Past negative, which includes in the perspective of Zimbardo and colleagues even unprocessed traumatic events, significantly interacts almost with all the Assumptions about the world, as hypothesized (H1), deteriorating the representation of reality and compromising the person's well-being. The Past positive shows an association with Justice: having had positive relational experiences, in different areas of social life, may have favored the construction of a vision of social reality as

Table 5 – Correlations between age, Assumptions on world, Time perspective, Eudaimonic well-being

| Variables | Past negative | Past positive | Pres. hedon. | Pres. fatal. | Future posit. | Future negat. | Justice persons world | Benev. persons world | Randomness | Controllability | Luck | Self-control | Self-worth | Life project | Personal growth |
|-----------|---------------|---------------|--------------|--------------|---------------|---------------|-----------------------|----------------------|------------|-----------------|------|--------------|------------|--------------|-----------------|
| Age | -.16+ | -.07 | -.026** | .08 | .14 | .2 | .03 | .21* | .05 | -.04 | .05 | -.23** | -.13 | -.01 | .05 |

+ $p < .06$; * $p < .05$; ** $p < .01$

Table 6 – Justice as dependent variable

| Variables | Beta | St. error of Beta | df | p | t |
|---|------|-------------------|----|------|------|
| Gender | .146 | .10 | 1 | .154 | 1.43 |
| Damages for work | .135 | .09 | 1 | .137 | 1.49 |
| Gender *damages for work ^(a) | .238 | .10 | 1 | .05 | 2.25 |

Legenda. ^(a) = range-test Neuman-Keuls, $p > .05$; *df* = degree of freedom

Table 7 – Controllability as dependent variable

| Variables | Beta | St. error of Beta | df | p | t |
|--|------|-------------------|----|------|------|
| Gender ^(a) | .335 | .09 | 1 | .001 | 3.39 |
| Damages for work | .129 | .08 | 1 | .14 | 1.45 |
| Gender *damages for work ^(a1) | .192 | .10 | 1 | .06 | 1.87 |

Legenda. ^(a) = Tukey post-hoc test, $p > .01$; ^(a1) = range-test Neuman-Keuls, $p > .01$; *df* = degree of freedom.

Table 8 – Randomness as dependent variable

| Variables | Beta | St. error of Beta | df | p | t |
|---|-------|-------------------|----|-----|-------|
| Gender | -.209 | .10 | 1 | .05 | -2.06 |
| Damages for work | .04 | .08 | 1 | .63 | .47 |
| Gender *damages for work ^(a) | -.231 | .10 | 1 | .05 | -2.10 |

Legenda. ^(a) = range-test Neuman-Keuls, $p > .01$; *df* = degree of freedom.

Table 9 – Self-worth as dependent variable

| Variables | Beta | St. error of Beta | df | p | t |
|---|------|-------------------|----|-----|------|
| Gender | .123 | .10 | 1 | .23 | 1.20 |
| Damages for work | .001 | .09 | 1 | .98 | .01 |
| Gender *damages for work ^(a) | .194 | .10 | 1 | .06 | 1.84 |

Legenda. ^(a) = range-test Neuman-Keuls, $p = .13$; *df* = degree of freedom.

Table 10 – Present fatalistic as dependent variable

| Variables | Beta | St. error of Beta | df | p | t |
|---|-------|-------------------|----|-----|-------|
| Gender | -.109 | .19 | 1 | .28 | -1.06 |
| Damages for work | .01 | .08 | 1 | .87 | .15 |
| Gender *damages for work ^(a) | -.180 | .10 | 1 | .09 | -1.69 |

Legenda. ^(a) = range-test Neuman-Keuls, $p = .20$; *df* = degree of freedom.

Table 11 – Future negative as dependent variable

| Variables | Beta | St. error of Beta | df | p | t |
|--|-------|-------------------|----|-----|-------|
| Gender | -.186 | .10 | 1 | .06 | -1.86 |
| Damages for work | .01 | .09 | 1 | .86 | .17 |
| Gender * damages for work ^(a) | -.255 | .10 | 1 | .01 | -2.48 |

Legenda. ^(a) = range-test Neuman-Keuls, $p > .01$; *df* = degree of freedom.

marked by a Justice that is expressed in the distribution of recognition and valorization to ethically correct behaviours. As highlighted a study by Rubini and colleagues (2013), the notion and experience of Justice develops first in family relationships, through the relationship between parents and siblings, and in particular of parents towards siblings. In the same way, the perception of a present far from personal control (and this can happen in the case of collective traumatic events such as the flood that devastated Romagna) appears to be linked to negative representations of the world, where Randomness disorientates people and is less the feeling of being able to count on others and in society in general, opening the way to the risk of closing in on oneself and depression, confirming the posed hypothesis H1. The future, in its positive dimension of building projects and actions, also appears strongly linked to Assumptions about the world, as posed; on the contrary, the breaking of Assumptions about the world due to traumatic events threatens the future prospective of recovery and of rebuilding a life after the trauma, as hypothesized. In this case, as predicted by the model developed by J-Bulmann, the crisis in Assumptions about the world brings with it the loss of hope in a better future, and the risk of a much more pessimistic and gloomy reconstruction of the reality of life, with the risk of arriving at a cynicism and a fatalistic vision that block any positive development of the person. Psychological-Eudaimonic well-being appears to be positively correlated with all positive

Assumptions about the world, and in particular with the benevolence of people, benevolence of the world, and Self-worth; negatively by perceiving events as random, without any intelligibility, confirming the hypothesis. The ability to plan towards the future and the feeling of growth as people requires a constructive vision of oneself, of others and of the forces that govern society, the Eudaimonic dimension of well-being being strongly anchored to the tension of self-realization within society (Ryff & Singer, 2008).

Age has significant associations with Assumptions benevolence of people, as already emerged from the studies of J-Bulman (1992): older people perceive and believe the people in general are benevolent whereas young people believe it much less. This data, that confirms the hypothesis H2, can be interpreted both as the presence of more numerous life experiences which have led to a deeper and broader overall look than people with less experience behind them, but also as the possible intervention of a rose-colored glasses which distorts reality in more positive sense, in line with studies on the prevalence of positive emotions in older people compared to other ages of life (Carstensen, Shavit & Barnes, 2020). At the same time, the belief of Luck as casual force that shapes the life-path decreases as age increases: it may be that the accumulation of experience leads to the comprehension of multiplicity of factors behind the outcomes in personal life. Some age-related effects are also observed on the Time perspective, already observed in previous studies (Zambianchi et al., 2019), such

as the decrease in the hedonistic present with increasing age. The Past negative also reduces, with advancing age. The lack of effects of schooling on the factors examined (with the exception of a weak effect on life plans) can be explained by the presence, in the entire sample of participants, of qualifications requiring a minimum of eight years of schooling, in any case a fairly high cultural threshold.

Interactions effects of gender and damages due to the flood on Assumptions about world, Time perspective and Eudaimonic-psychological well-being emerged perhaps as among the most interesting results of the study. Indeed, the presence of damages due to the flood seems to be very relevant for the Assumptions on the world, and also for Time perspective, as proposed in hypothesis H3. People who had professional damages or personal damages due to the flood possess higher level of Self-worth compared with people without damages, as hypothesized (H3). This data could be interpreted, perhaps, as a psychological defense against the sense of loss and of deprivation, a defense for the protection of self-esteem. An important and unexpected data is represented by the differences emerged between men and women on world Assumptions and having had or not having had damages due to the flood at work. The flood has in fact hit companies, shops, agricultural crops, causing in several cases the complete loss of equipment, and extensive damage to buildings, compromising the possibility of continuing the activity, and for this reason also leading to the prospect of unemployment, or in any case huge expenses to be able to restart the job. The assumption about the random distribution of events (Randomness) is an important factor of well-being and proactivity. The lack of intelligibility in events, the perception that there is no order, no recognizable meaning in what happens produces negative effects not only on an emotional level, but also on a planning level. The flood event therefore seems to have a differentiated impact on men and women, and this difference emerges in relation to damage to their livelihoods (work). In the case of trauma due to the flood, men who have had damage to their work equipment present a lesser vision of the Randomness of what happens (flood as a product not of meteorological chance but as a product of human negligence on the territory?); the opposite appears to be for women: those who indicated damage to their work equipment perceive a greater Randomness in the events compared to women who did not experience damage. Women seem to be affected to a greater extent than men, if we consider the potential negative effects that an accentuated perception

of Randomness can have in the long term. The fatalistic vision of reality in fact reduces the perception of its Controllability, in turn reducing the action aimed at modifying non-positive situations (Rotter, 1966). This possible negative configuration is supported by the correlation that emerged in the study between the Present fatalistic and the Randomness of events. It therefore seems that having experienced the flood event with damage to work equipment has an impact on women in particular, risking increasing a vision of reality as subject to chance and therefore on which nothing can be done. In men, however, a vision of reality seems to prevail which is strengthened by attributing critical events not to chance, but rather to traceable and precise causes.

One of the Assumptions about world that received a very low score in this study, as above highlighted in the description of the sample, is the belief in the existence of distributive Justice, that is, believing that rewards and punishments are not distributed randomly among people, but according to a logic of merit or demerit (J-Bulmann, 1992; Rawls, 1971). Despite the low score in itself, this belief appears to be influenced by gender, with opposite outcomes in relation to work-related harm. Men who have suffered damage believe that Justice, if the right behaviour is produced, will make its effects felt with concrete interventions aimed at repairing this damage. On the contrary, the women harmed for their work believe that there cannot be a Justice that will act on the basis of virtuous behaviour or in any case such as to make them worthy of interventions aimed at restoring a broken Justice (the flood as an event that destroys people, objects and what is essential to their working and emotional life). A much more pessimistic and disheartened vision than their male colleagues, which could have important consequences in the future. Perhaps the female world is still today (in our Italian society) more fragile or at greater risk than men in the event of loss of the equipment for work such as in the case of autonomous work. Perhaps self-employed women may be at risk of failure to recover due to adverse family conditions (being the sole caregivers of elderly people and/or young children; Rosina & Impicciatore, 2023). Unlike the male entrepreneurial world, which enjoys greater time and autonomy, essential for recovery in dramatic cases such as the loss of work equipment due to a flood. On the other hand, control over events, an assumption that recalls proactivity as a coping style to actively modify difficult situations (Zambianchi, 2021), appears significantly lower in the women of the entire sample than in the men. The presence

of damages on personal things appears more relevant for self-esteem and dignity, the assumption on the world defined as Self-worth; perhaps the loss of objects belonging to one's life story, with strong affective and emotional value such as paintings, furniture, photos is felt as a loss of self-objects, related for this reason to the deep personal identity (Csíkszentmihályi & Rockberg, 1986; Kohut, 2009), and for this reason it produces the need to defend one's profound integrity and dignity.

Eudaimonic well-being does not present significant differences in relation to Assumptions about the world and the presence or absence of damage due to the flood. Being centered on the development of self and future life plans, it is perhaps modified more slowly. Unlike hedonic well-being, which is centered on the quality of life but also on the emotional experience, the latter being very sensitive to changes in the context and to events. It is therefore probable that it will undergo, or may undergo, modifications in the near future based on the changes produced by the flood, the possibility of reducing damage, aid from the institutions, processing of the trauma and the opportunities that open up after this event. The Assumptions about the world and the Time perspective can change over time, not immediately after a disaster, and especially, we could hypothesize, after having or not received help, assistance, restoration at a psychological, social and economic level during the hardest months after the disaster. The relevance of Assumptions on the world and Time perspective for people that experienced this traumatic event and the loss of work tools and personal things that emerged in the study suggests potential avenues for interventions aimed at supporting people who had

experienced this traumatic event. Psychotherapists and counselors could include specific time-based interventions (Boniwell et al., 2014; Celani & Zambianchi, 2025; Sword et al., 2014; Zimbardo et al., 2012) to restore a better time organization, with less prominent Future negative and Present fatalistic and interventions aimed at preventing or recreating better world-schemata for avoiding adverse long-term outcomes, as already suggested by J-Bulmann studies and other researchers that attested to the relevance of these cognitive frames for a constructive vs problematic relationship toward social and inner personal life.

Limitations of the study

The study has several limits, that must be taken into account. The first limit is the small sample, that does not permit to trace back rigorous conclusions about results obtained. Another important limit is the online recruitment, that can exclude people without digital skills, such as segments of older people with low level of school education. A second, broader research, not only through online platform could add information and especially could allow a more in depth evaluation of the long-term consequences of this collective trauma among the population of Emilia-Romagna on the study variables Assumptions about the world, Time perspective and Eudaimonic well-being here considered.

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The impact of quality of life and resilience on death anxiety: A comparative study among married and unmarried ambulance workers

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• **ABSTRACT.** Questo studio ha esaminato l'interazione tra qualità della vita, resilienza e ansia per la morte tra gli operatori delle ambulanze, esplorando come lo stato civile influenzi queste relazioni. Utilizzando un disegno di ricerca correlazionale trasversale, sono state valutate le tre variabili rispettivamente attraverso il WHO-QOL BREF Questionnaire, la Resilience Scale-Urdu (RS-14), e il Death Anxiety Questionnaire-Urdu (DAQ-U). Il campione, raccolto attraverso una tecnica di campionamento mirato, è composto da 276 partecipanti di età compresa tra i 18 e i 40 anni. I risultati dello studio hanno indicato che esiste una differenza significativa tra la qualità della vita (ambientale), la resilienza e l'ansia per la morte tra il personale paramedico sposato e quello non sposato arrivando a concludere che la resilienza e lo stato civile giocano un ruolo significativo.

• **SUMMARY.** As frontline responders to medical emergencies, ambulance workers face constant exposure to life-threatening situations and high stress, underscoring the need to understand the factors affecting their psychological well-being. This study examined the interplay between quality of life, resilience, and death anxiety among ambulance workers, exploring how marital status influences these relationships. The study employed a cross-sectional correlational research design. The quality of life, resilience, and death anxiety variables were assessed through the World Health Organization-Quality of Life (WHO-QOL) BREF, Resilience Scale-Urdu (RS-14), and Death Anxiety Questionnaire-Urdu (DAQ-U) respectively. The sample was collected through a purposive sampling technique and consisted of 276 participants aged 18-40. The findings of the study indicated that quality of life, resilience, and death anxiety have a strong relationship with each other among ambulance personnel. Quality of life showed a positive correlation with resilience while negatively correlating with death anxiety. Quality of life indicated no impact while resilience indicated a predictive negative effect on death anxiety. Married ambulance workers scored comparatively higher on (physical, psychological, and environmental domains) of quality of life, and resilience. Unmarried ambulance workers scored comparatively higher on (social relationship) quality of life and death anxiety. There is a significant difference between the (environment) quality of life, resilience, and death anxiety among married and unmarried ambulance personnel. The findings of the study concluded that resilience and marital status play a significant role in death anxiety among ambulance personnel. Further studies can investigate this relationship with other health-related and security professionals.

Keywords: Quality of life, Death anxiety, Resilience, Ambulance service

INTRODUCTION

Emergency medical services (EMS) is a type of preclinical care that is organized and structured to transfer sick or injured patients to a hospital (Hossain et al., 2022). Recent research states the significance of ambulance workers as those who give patients pre-hospital care and are among the most important pillars in the healthcare system (Adnan, Kamauzaman, Lonik & Ab Hamid, 2023). Being subjected to direct and indirect/vicarious traumatic experiences, such as witnessing their patients' difficulties with death/illness is an unavoidable part of the job of ambulance personnel (Kang et al., 2018). Thus, exposure to traumatic incidents and stressors is a necessary part of work for emergency workers.

Poor psychological health is frequently related to emergency medical personnel, which surely has an impact on both their mental and professional well-being. Because they are frequently under extreme strain during crises, ambulance personnel are especially vulnerable to mental health issues. Not only are they exposed to patients, but they also operate in horrific environments frequently accident scenes, fatalities, burns, and natural disasters which makes them susceptible to psychiatric disorders (Naushed et al., 2019). Since the emergency service served as the initial point of contact for patients seeking pre-hospital care, ambulance personnel required a thorough understanding of the patient's condition to provide them with professional care (Adnan et al., 2023). Consequently, there may be instances of stressful circumstances that could harm the patient and cause psychological distress in the ambulance workers.

Increasing stress, anxiety, and depression have been linked to several variables, such as insomnia, sleep disorders, length of work, irregular breaks because of work shifts, family separation, increasing workloads, and patient care involvement (Rajabi, Jahangiri, Molaeifar, Honarbakhsh & Farhadi, 2018). These problems can be made worse by the fact that healthcare professionals frequently struggle with their patients' lives and deaths. It is vital to remember that poor psychological health can have a significant effect on an individual's quality of life and may lead to lower performance. As a result, this may also have an impact on patient care quality and safety (Almutairi, Al-Rashdi & Almutairi, 2020).

Therefore, ambulance crews may be at a higher risk of acquiring work-related health problems such as psychological issues such as depression, exhaustion, PTSD, and job burnout, thus lowering their productivity, resilience,

and quality of life (Calhoon, 2021). Occupational exposure to death or serious injury has been linked to higher levels of fear of death and death avoidance (Chegini et al., 2022). Maintaining and improving the mental and emotional health of EMS employees is very crucial for both the staff and the general public who receive their services (Lawn et al., 2020).

Thus studying the impact on ambulance workers because of daily exposure to direct/indirect stressors such as deaths and injuries is very crucial for the employees as well as the target population who avail the services. The role of resilience is to keep their quality of life better thus providing efficient services to the community. Being a developed country, it's a time of need to study these crucial variables among the ambulance workers for the well-being of employees and the community.

Quality of life

Today scientists are interested in a variety of topics, and quality of life (QoL) is one of them. True human aspiration of QoL is happiness, well-being, and life satisfaction and in a rapidly growing world, quality of life is becoming increasingly important since an increasing number of people are unhappy and depressed. Employees who work in emergency medical services (EMS) deal with stressful work settings and accidental exposure that leads to burnout, and secondary traumatic stress (Miller & Pescaroli, 2018). Thus, it is essential to properly analyze and manage job stress and burnout among EMTs to develop improvement programs for a better quality of life.

Quality of life is defined by the World Health Organization as "an individual's view of his or her position in life in reference to his culture as well as a value system in which he or she lives, and in reference to his or her objectives, aspirations, concerns, and standards". It is also important to consider the WHO's definition of "quality of life", which refers to the overall physical, mental, social, and spiritual well-being (WHOQOL Group, 1995). All facets of an individual's social and personal well-being, such as optimal mental health, the maintenance of a comprehensive and active lifestyle, supportive and positive social relationships, and elevated life satisfaction, contribute to the quality of life.

According to the 20 years of systematic review of the happy worker productive thesis, employees who are happy at work are more productive than others who are not happy. A happy employee may not always align with the organization's

common aspirations or contribute directly to its goals, but there is a strong connection between individual happiness and efficient work performance. Team performance (creativity or organizational citizenship) is an outcome of collective well-being which contributes to objective work-unit performance (Sender, Nobre, Armagan & Fleck, 2021).

Literature suggests that there are three dimensions to quality of life among rescue workers, two of these are adverse (compassion fatigue and burnout) and one of these is favorable (compassion satisfaction) (Caricati, Panari & Melleri, 2020). Thus, in ambulance workers, both positive and negative dimensions have been studied on their quality of life due to their work nature. Ambulance and fire officers among the rescue workers, are more often to experience occupational stress that may have negative impact on their quality of life (Ntatamala & Adams, 2022).

Resilience

Resilience refers as the capability to recoil back from or overcome adversity, resulting in positive outcomes despite a traumatic occurrence or scenario. Individuals who are very optimistic report being more inventive, and amenable, have good decision power, and can develop new relationships. Over a period, recurrent experiences of optimism generate a variety of personal resources, leading to resilience (Dewi & Hamzah, 2019).

Relationship between quality of life and resilience

A study investigated the correlation between professional quality of life and self-compassion, empathy, and resilience in healthcare personnel during the COVID-19 pandemic in Spain. Findings show that the three primary predictors of compassion fatigue, compassion satisfaction, and burnout were empathy, resilience, and mindfulness, respectively. The findings suggest the significance of resilience to the positive dimension of quality of life.

Increased exposure to acute and chronic occupational stress remained positively connected with PTSD research. While resilience and higher levels of quality of life were protective (Ntatamala & Adams, 2022). Another study's findings show that positive cognitive appraisal and effective

coping mechanisms are common among high-resilient people, and as a result, they are better able to cope with trauma and even grow from it (Behnke, 2021).

Further studies show that resilience works as a coping strategy (Smith, Emerson, Boster & Everly, 2020). Individuals who used nonadaptive coping methods (such as substance abuse or self-blame) experienced more distress and negative trauma that eventually lowered their quality of life (Skalski, Dobrakowski & Wasilewska, 2022). Another study's findings show that the most effective factor in predicting each of the QoL domains was resilience. Those nursing faculty members who could adjust to the demands and adjustments brought about by the COVID-19 pandemic reported higher quality of life. Further it is found that resilience works as a coping strategy and is significantly positively correlated to every domain of quality of life (Keener, Hall, Wang, Hulsey & Piamjariyakul, 2021). As a result, developing resilience will enhance the quality of life. Ambulance staff with higher levels of resilience seem to view indirect traumas as a challenge, so they use problem-solving skills and are skilled at finding something good to take away from their traumatic events (Kang et al., 2018). This shows that quality of life and resilience affect each other at a significant level. If ambulance staff have high resilience, they will learn something positive from events that eventually have a positive effect on their quality of life.

Death anxiety

The fear of dying, both for yourself and for others, is referred to as death anxiety (Galanis et al., 2022). There are three types of death anxiety. The first is predatory death anxiety triggered by risky situations when a person's life is on the line. Individual's alternative resources are catalyzed, which stimulates the fight or flight response. This is a deliberate action to confront the threat or escape from that environment. The second type is known as predation anxiety, created by circumstances in which one person annihilates another, whether emotionally or physically. It is linked to resulting in constant guilt that prepares people to take quick acts to damage others (Langs, 2018).

The third is existential death apprehension, the most common type of anxiety due to the worry of dying. Human reactions to death are diverse, multifaceted, and dynamic. Pain, loneliness, ultimate loss of life, ambiguity, finality, and

violence of death are all examples of death anxiety. Humans assign varied interpretations to events and objects in their physical surroundings. As a result, people formed particular connections with death, and the effects would differ depending on whether the death has positive or negative meanings (Langs, 2018; Willis, Nelson & Moreno, 2019).

According to the recent systematic review as part of their work, ambulance personnel which includes, emergency medical technicians, paramedics, and others frequently encounter potentially disturbing scenarios. systematic review shows substantial evidence that depression, PTSD and anxiety disorders are more common in emergency medical professionals while individual-difference factors showed weak or inconsistent relationships with symptoms, while exposure-related and organizational factors had the best predictive associations with PTSD symptoms. Crucially, there is currently insufficient information available about the effects of traumatic exposure at work on anxiety and depression in ambulance workers. This gap in the research must be filled to direct organizational response to these disorders in ambulance workers (Wagner et al., 2020). Thus, death anxiety and how it affects quality of life is studied among ambulance workers in this study.

Quality of life and death anxiety

On a daily basis, palliative care providers are exposed to death and dying. Their feelings about death may have an impact on their own quality of life as well as the care they provide to terminally ill patients and their families. There is much evidence that shows an association between quality of life, death anxiety, and mental health (Willis et al., 2019). Kastenbaum's Edge theory proposes that when people feel their lives are in danger, death anxiety takes on a survival function (Kastenbaum, 2000). According to the findings, death fear can be enhanced by a reduction in a variety of social, physiological, psychological, and environmental components that ultimately make up the notion of quality of life. Another study finding shows reducing death anxiety may be crucial to enhancing quality of life (Ji et al., 2024). A study on Covid 19 in healthcare professionals in Spain demonstrated how life satisfaction is negatively impacted by death anxiety. There was a correlation between poorer life satisfaction and higher death anxiety in nurses (Karabağ Aydın & Fidan, 2022).

Resilience and death anxiety

Higher resilience scores were associated with reduced levels of death anxiety (Edo-Gual, Monforte-Royo, Aradilla-Herrero & Tomás-Sábado, 2015). Another study also showed an indirect correlation between moral courage, resilience, and death anxiety. Thus, it has been concluded that death-related thoughts had a statistically significant inverse connection with optimism, and resilience. The findings for the nursing students during COVID-19 indicated a strong and inverse relationship between resilience and death anxiety (Mohammadi, Masoumi, Oshvandi, Khazaei & Bijani, 2022). Resilience and anxiety in health care personnel investigated that participants have experienced psychological effects as a result of the extraordinary global state of emergency brought forth by the COVID-19 epidemic. The participants exhibited significant levels of resilience, and over half of them displayed symptoms suggestive of a potential diagnosis of generalized anxiety disorder. Professionals who were exposed to exceptionally stressful situations acquired symptoms suggestive of a potential diagnosis of generalized anxiety disorder. Resilience abilities, however, served as a buffer (Peñacoba et al., 2021). While there is no literature on resilience and death anxiety particularly in ambulance personal up to the best of the researcher's knowledge. This literature gap is identified in this study.

Marital status and social support

Marital status of ambulance personnel plays significant role in buffering resilience. Emotional demands were shown to be high among emergency responders. As a result, spouses provide support by avoiding conflict, reduced their own emotional needs and compensated emotionally in relationship to balance mental problem and stress faced by emergency responders (Novara et al., 2015; Sharp et al., 2022). Emergency personnel reported that more of the support is coming from their family and friends despite having peer support programs at organization (Lawn et al., 2020). Furthermore, a study shows that ambulance worker with full PTSD is found to be significant in number in non-married as compared to married and thus having relatively low quality of life (Zegel, Leonard, Healy, & Vujanovic, 2023). Another study reported that being single or divorce linked with lower resilience among professional health emergency

workers (Sánchez-Zaballos & Mosteiro-Díaz, 2021). Another meta-analysis findings suggest that in romantic relationships, traumatic stress is transmissible, thus it highlights the significance of marital status and importance of mental health in context of ambulance workers (Wang, Ford, Credé, Harms & Lester, 2023). Recent literature shows that in paramedics there is no significant relationship exist between marital status and resilience (Alhamdani et al., 2024; Mcizana, Adams, Khan & Ntatalama, 2024). In response to these contradictory findings there is need to study marital status in the framework of quality of life, resilience and death anxiety among ambulance workers.

Up to researcher knowledge literature shows under representative findings regarding ambulance personnel's marital status and its role in mental health significance. Thus, this study explores the role of marital status of ambulance personnel and its impact on their quality of life, resilience, and death anxiety.

Literature shows representative findings regarding ambulance personnel's marital status highlighting the significant role it plays in fostering resilience and meeting emotional needs (Lawn et al., 2020). This study explores the role of the marital status of ambulance personnel and its impact on the quality of life, resilience, and death anxiety.

Terror management theory

The terror management theory proposed by Ernest Becker is one of the major theories that have been established to explain the existence of death anxiety (Pyszczynski, Greenberg & Solomon, 1999), a dual process model for explaining death anxiety that has been widely embraced. According to terror management theory, the fear of death is based on the fear of extinction., when one becomes aware of their mortality, they engage in a series of proximal defenses intended to minimize the anxiety associated with death.

The awareness of one's death is unavoidable, through death reminders is coupled with death anxiety, which is the driving force underlying a wide range of behaviors intended to defend oneself or one's social group from danger. There are two pathways one is in consciousness and the other is out of consciousness. Immediate death anxiety is defended by consciousness through proximal defense where one defends himself by denying, distracting, and rationalization. When approaching threat of mortality is reduced one defends

himself by distal defense through cultural worldview, striving for self-esteem and social relationships. (Menziez, Sharpe & Dar-Nimrod, 2019).

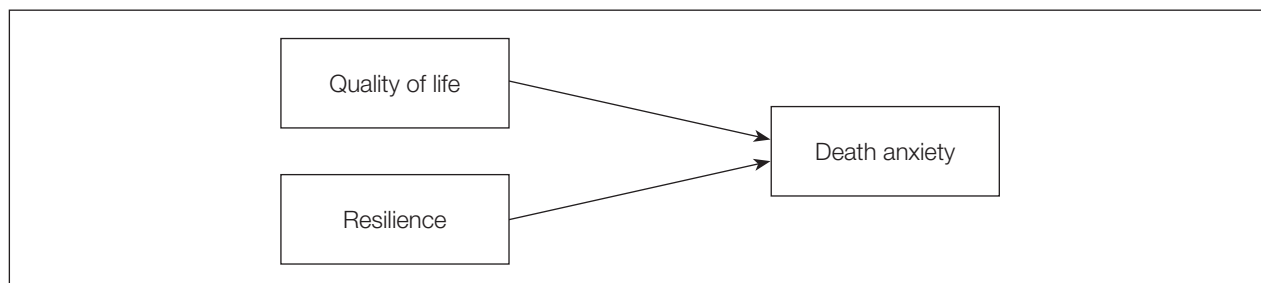
There are multiple variables to be considered in this theoretical structure but resilience, quality of life and death anxiety are the most suitable variables along with marital status. Because these are significant for the well-being investigation of ambulance workers. Death reminders are common for ambulance workers while dealing with incidents via dead bodies and injuries coupled with death anxiety. To defend themselves they immediately involve in the unconscious pathway of rationalization i.e. adaptive coping resilience and the conscious pathway of social relationships i.e. marital status plays a significant role as a protective factor. Social relationships particularly romantic relationship maintaining practices such as romantic partners reduce death anxiety (Menziez et al., 2019). Literature suggests the inverse relationship between death anxiety and quality of life (Willis et al., 2019). Thus in the current study, we are approaching the variables in the target population with respect to their relationship as married and unmarried

Rationale of the study

Quality of life, resilience, and death anxiety have been studied previously, but their relationship with emergency services, particularly ambulances, is not adequately represented in prior research. The emergency services are the life savers and sustainers of the society. The ambulance personnel are at high risk for developing psychological distress and death anxiety due to recurrent exposure to traumatic events. So, this study aims to find the relationship between the quality of life, resilience, and death anxiety in ambulance personnel (see Figure 1).

Previous literature shows that there can be positive or negative effects on the ambulance crew's quality of life (Caricati et al., 2020). Moreover, the relationship between death anxiety and quality of life has been investigated in patients and caregivers. However, this relationship under representative research has been found in ambulance personnel to the best of the researcher's knowledge. Thus, the present study aims to study this relationship in ambulance personnel and whether the quality of life in relationship with death anxiety and resilience will have a positive or negative effect.

Figure 1 – Hypothesized model of study



Other than a study conducted on nurses shows that a relationship exists among resilience, death anxiety, and quality of life (Pourakbari et al., 2014) there is no other study with these respective variables in emergency workers. Moreover, literature shows that occupational exposure to death and injury can increase death anxiety in hospital staff (Özer, Özkan, Özmen & Ercoban, 2023) and decrease death anxiety in nurses (Milligan & Almomani, 2020). While there is not enough research in relevance to ambulance workers thus the current study aims to study this relationship among ambulance personnel as well as to investigate that in ambulance personnel whether the death anxiety will be elevated or reduced. Further, there is no literature on resilience and death anxiety particularly in ambulance personnel up to the best of the researcher's knowledge. This literature gap is identified in this study.

The literature shows that the social factor fosters resilience and ambulance crews have high emotional demands thus having close interpersonal relationships (Lawn et al., 2020). Further, a study shows that ambulance worker with full PTSD is found to be significant in the number of non-married as compared to married (Zegel et al., 2023). In another study results show that there is no significant impact of PTSD on the marital status among pre-hospital healthcare staff (Abbaspour et al., 2020), thus literature has contradictory findings regarding the marital. Thus, there is a need for more studies to have stable results. So, this study aims to find out whether marital status has or has not an impact on quality of life, resilience, and death anxiety among ambulance personnel.

In Pakistan, emergency services particularly ambulance personnel's mental well-being have not been given such significance yet. In this situation, their resilience

(psychological hardiness) and quality of life can have significant importance for their well-being. So, this study aims to find the relationship among these variables. The findings of this study will also play a significant role in developing interventions to improve the mental health and well-being of ambulance workers. It will also assist in finding out the role of marital status in the quality of life, resilience, and death anxiety of ambulance personnel. These findings will be very helpful for ambulance workers who pursue mental well-being. Further studies should work on the intervention development for the ambulance personnel's well-being.

METHOD

Objectives of the study

The following are the objectives of the study:

- to study the relationship between quality of life and resilience among ambulance personnel;
- to study the relationship of quality of life and resilience with death anxiety among ambulance personnel;
- to study the impact of quality of life and resilience on death anxiety among ambulance personnel;
- to study the difference in marital status (unmarried and married) with the quality of life, resilience, and death anxiety among ambulance personnel.

Hypotheses of the study

Following are the hypotheses of the study.

- There is a positive relationship between quality of life and

resilience among ambulance personnel.

- There is a negative relationship between quality of life and resilience with death anxiety among ambulance personnel.
- There is a predictive role of quality of life and resilience on death anxiety among ambulance personnel.
- Among the ambulance personnel, there is a difference in marital status (married and unmarried) in reference to quality of life, resilience, and death anxiety.

Operational definition of variables

Quality of life. Quality of life is typically defined as the perception, an individual has regarding his/her position in life, the system of values, and the cultural context in which he/she lives, in relation to his/her interests, expectations, and achievements (WHOQOL Group, 1995). In the present study, an individual with higher scores on the *World Health Organization-Quality of Life (WHO-QOL) BREF Questionnaire* will show a higher degree of quality of life.

Resilience. The tendency of a system to adapt successfully to problems that threaten the system's function, survival, or future development is characterized as resilience (Masten, Lucke, Nelson & Stallworthy, 2021). In the present study, an individual high score on the *Resilience (R-14) Questionnaire* will indicate a higher degree of resilience.

Death anxiety. The North American Nursing Diagnosis Association defines death anxiety as a feeling of fear, and unease associated with death certainty or near-death situations (Templer & McMordiein, 1979). The individual

high scores on the *Death Anxiety Questionnaire* will indicate the degree of death anxiety in an individual.

Research design

The study followed the cross-sectional correlational research design to find the relationship between quality of life, resilience, and death anxiety among married and unmarried ambulance workers.

Sample

The sample ($N = 276$) comprised ambulance personnel. Data were collected only from male, single ($n = 125$) and married ($n = 151$) ambulance personnel. The sample was selected using a purposive sampling technique from the Islamabad and Rawalpindi regions (see Table 1).

Instruments

Demographic Information Sheet. The demographic sheet included information regarding name, age, marital status, name of ambulance agency, location, and exposure to incidents per day in a week.

World Health Organization-Quality of Life (WHO-QOL) BREF Questionnaire. The manual of WHOQOL was created by Alison Harper and his colleagues in 1998 under Dr. J.

Table 1 –Descriptive characteristics of marital status (N = 276)

| Marital status | Frequency | Percent |
|----------------|-----------|---------|
| Unmarried | 125 | 45.3 |
| Married | 151 | 54.7 |
| <i>Total</i> | 276 | 100 |

Orley. WHO-QOL BREF is derived from the WHO-QOL 100 questionnaire that investigates the individual's QoL on the conceptual framework of the WHOQOL definition. It's comprised of 25 items on a five-point Likert scale that examines the QoL in four domains i.e., Psychological, physical, social relationships, and environment. The higher values represent the higher QoL and vice versa. The overall scale reliability is .89, while the reliability of the physical domain is .87, the psychological domain is .87, the social relationship domain is .69, and the environment is .84. The overall scale has good to excellent reliability as well as good content and discriminate validity.

The 14-Item Resilience Scale-Urdu (RS-14). Fourteen-Item Resilience Scale (Wagnild & Young, 1993) translated version into Urdu (Khalid, 2013) is used in study. The scale is comprised of 14 items with five items referring to self-reliance (1,5,7,12 and 14), three items referring to meaningfulness (2, 9 and 13), two items referring to equanimity (3 and 10), two items referring to perseverance (6 and 8), and two items referring to existential aloneness (4 and 11). It is measured on a seven-point Likert scale. Its Cronbach's Alpha ranges from .89 to .96 which is considered excellent.

Death Anxiety Questionnaire-Urdu (DAQ-U). The Death Anxiety Questionnaire was developed by 11 bilingual specialists in 2015 and was revised by Donald Templer (2006). The scale is comprised of 15 items on a 5-point Likert scale. The score ranges between 15-75 indicates low, whereas 36-55 indicates moderate, and 56-75 indicates high death anxiety. The DAS-Urdu version is divided into two divisions, with eight elements in the first division and seven in the second (Saleem, Gul & Saleem, 2015). The split-half coefficient was .85, and the correlation coefficient obtained between the two divisions was .78 and DAS has an excellent Alpha reliability of .88.

Procedure

The ambulance workers were approached individually for data collection. As most of the participants were illiterate, so mostly questions were asked verbally, and their responses were noted. Participants had given informed consent forms following the confidentiality. Participants were requested to fill up the demographic survey followed by WHO-QOL BREF, RS-14, and DAQ-U. All their queries were well addressed at that time and their cooperation was highly appreciated at the end of the study.

RESULTS

In this study, we aim to explore the intricate relationships among quality of life, resilience, and death anxiety among ambulance personnel, aiming to shed light on how these factors interact within this unique and high-stress profession.

The sample characteristics of the study variables reveal important insights into the data distribution and reliability of the measures used. With a sample size of 276, the quality of life (QOL) variable demonstrated a high reliability coefficient ($\alpha = .94$) and a mean score of 80.7, indicating that participants generally reported a favorable quality of life within the potential range of 26 to 130. The resilience measure also showed strong reliability ($\alpha = .95$). Similarly, the death anxiety (Anx) variable exhibited good reliability ($\alpha = .92$) and a mean score of 47.0, indicating moderate levels of anxiety related to death within the range of 15 to 75. The skewness and kurtosis values for all variables suggest that the data distributions are relatively symmetrical and indicate a normal distribution, supporting the appropriateness of parametric statistical analyses in subsequent evaluations. Overall, these findings highlight the robust nature of the data and provide a foundation for understanding the relationships among quality of life, resilience, and death anxiety in the study population (see Table 2).

Table 3 illustrates the interrelationships among quality of life, resilience, and death anxiety. A strong positive correlation ($r = .84, p < .01$) between quality of life and resilience indicates that individuals who report higher overall life satisfaction tend to exhibit greater resilience, suggesting that a fulfilling life experience enhances one's ability to adapt and cope with challenges. Conversely, the negative correlation between quality of life and death anxiety ($r = -.61, p < .01$) reveals that higher quality of life is associated with lower levels of death anxiety, meaning that those with a more satisfying life experience are less fearful of death. Additionally, a significant negative correlation between resilience and death anxiety ($r = -.59, p < .01$) highlights that individuals with higher resilience levels are likely to experience less death anxiety, indicating that adaptability and effective coping strategies can mitigate fears related to death. Together, these findings underscore the importance of fostering resilience and improving quality of life as potential avenues for reducing death anxiety.

The multiple regression analysis indicates a significant relationship between quality of life (QOL) and resilience as

Table 2 – Sample characteristics of the study variables (N = 276)

| Variables | N | α | Potential range | | Actual range | | M | SD | Skew | Kurt |
|------------|----|----------|-----------------|-----|--------------|-----|------|------|------|-------|
| | | | Min | Max | Min | Max | | | | |
| QOL | 26 | .94 | 26 | 130 | 45 | 123 | 80.7 | 18.8 | .19 | -1.20 |
| Resilience | 14 | .95 | 14 | 98 | 23 | 98 | 57.9 | 19.3 | .24 | -1.29 |
| Death anx | 15 | .92 | 15 | 75 | 23 | 75 | 47.0 | 12.4 | -.29 | -1.18 |

Legenda. QOL = quality of life; anx = anxiety; Skew = skewness; Kurt = kurtosis.

Table 3 – Correlation among study variables (N = 276)

| No. | Variables | 1 | 2 | 3 |
|-----|-----------------|---|-------|--------|
| 1 | Quality of life | – | .84** | -.61** |
| 2 | Resilience | – | – | -.59** |
| 3 | Death anxiety | – | – | – |

Note. Correlation is significant at the .01 level (2-tailed).

predictors of death anxiety among ambulance personnel, with the model explaining 39% of the variance in death anxiety ($R^2 = .39$). Both predictors have a substantial standardized effect, with QOL ($\beta = -.39, p < .01$) demonstrating a stronger impact than resilience ($\beta = -.26, p < .01$). The confidence intervals (LL and UL) for both predictors do not include zero, further supporting the significance of these findings. Collectively, these results underscore the importance of enhancing quality of life and resilience as effective strategies for reducing death anxiety in this population (see Table 4).

Table 5 compares the mean differences in quality of life (QOL), resilience, and death anxiety between unmarried ($n = 125$) and married ($n = 151$) ambulance personnel. Married individuals reported significantly higher resilience

($M = 60.34, SD = 21.85$) compared to unmarried individuals ($M = 54.89, SD = 15.14$), with a significant difference ($t = -2.35, p = .01$) and a moderate effect size (Cohen's $d = .29$). Additionally, married personnel exhibited lower levels of death anxiety ($M = 45.30, SD = 13.41$) than their unmarried counterparts ($M = 49.14, SD = 10.75$), which was also statistically significant ($t = 2.59, p = .01$) with a moderate effect size (Cohen's $d = .32$). Although the difference in QOL was higher among married individuals ($M = 82.56, SD = 21.33$) compared to unmarried individuals ($M = 78.47, SD = 15.05$), it did not reach statistical significance ($t = -1.80, p = .07$). Overall, these findings suggest that marital status significantly influences resilience and death anxiety among ambulance personnel.

Table 4 – Multiple regression analysis for quality of life and resilience in predicting death anxiety (N = 276)

| Variable | Unstandardized coefficient | | Standardized coefficient | 95%CI | |
|----------------|----------------------------|------|--------------------------|-------|-------|
| | B | SE | B | LL | UL |
| Constant | 77.72 | 2.65 | | 72.49 | 82.95 |
| QOL | -.25 | .06 | -.39*** | -.37 | -.14 |
| Resilience | -.17 | .05 | -.26** | -.28 | -.05 |
| R ² | .39 | | | | |
| F | 90.53*** | | | | |

Legenda. QOL = quality of life; SE = standard error; CI = confidence interval; LL = lower level; UL = upper level.
 p*<.01, *p*<.001

Table 5 – Group comparison/mean differences for gender across study variables (N = 276)

| Variables | Marital status | | T | p | 95%CI | | Cohen's d |
|---------------|------------------------|----------------------|-------|-----|-------|------|-----------|
| | Unmarried (n = 125) | Married (n = 151) | | | LL | UL | |
| | M (SD) | M (SD) | | | | | |
| QOL | 78.47 (15.05) | 82.56 (21.33) | -1.80 | .07 | -8.55 | .372 | .22 |
| Resilience | 54.89 (15.14) | 60.34 (21.85) | -2.35 | .01 | -9.99 | -.90 | .29 |
| Death anxiety | 49.14 (10.75) | 45.30 (13.41) | 2.59 | .01 | .92 | 6.77 | .32 |

Legenda. M = mean; SD = standard derivation; CI = confidence interval; LL = lower level; UL = upper level; QOL = quality of life.

DISCUSSION

The present research aims to examine the relationship between quality of life, resilience, and death anxiety among ambulance workers in the context of Pakistan. Specifically,

it seeks to understand the predictive role of resilience and quality of life in determining death anxiety. The findings strongly support the idea that resilience is positively related to quality of life, echoing previous studies (Chen et al., 2023), and provide valuable insights into the dynamics of resilience

in the lives of ambulance personnel.

Resilience emerged as a significant predictor, positively influencing the overall quality of life. The characteristics inherent in resilient individuals, such as their preference for active coping strategies over avoidant ones (Fullerton, Zhang & Kleitman, 2021), may explain this positive relationship. In stressful situations, resilient individuals adapt more readily, reframing negative emotions into positive ones, significantly contributing to better mental health and life satisfaction. As Chen and colleagues (2023) highlight, resilience not only reduces stress but fosters happiness and satisfaction, enhancing the quality of life overall. This ability to maintain a positive outlook in adversity plays a critical role in self-regulation and maintaining well-being. In line with this, the research underscores that when faced with psychological trauma or adversity, resilient individuals tend to use cognitive reappraisal techniques, which help them experience more positive emotions (Friedberg & Malefakis, 2022). This optimistic assessment of life circumstances allows them to self-regulate effectively, even in high-stress situations (Crane, Searle, Kangas & Nwiran, 2019). Such traits of resilience, including positive self-assessment and self-worth, are closely linked to improved quality of life, further solidifying resilience as a protective factor in managing life stressors.

The negative relationship between resilience and death anxiety is another important finding. Ambulance personnel, who are regularly exposed to traumatic events, benefit from resilience as it provides them with the psychological tools to cope with their frequent encounters with death. Resilience helps reduce the intensity of death anxiety by allowing these workers to process their experiences more adaptively, thus minimizing emotional distress (Fullerton et al., 2021). As a result, resilient individuals may view death as an inherent part of their job, which they can accept and confront with less fear. This resilience not only allows ambulance personnel to confront death anxiety but also enables them to find meaning in their work and maintain a sense of control through effective coping strategies (Kaplánová & Gregor, 2021). Fostering resilience through training, peer support, and mental health resources could, therefore, be a crucial step in helping these workers manage death anxiety, improving their well-being and job performance.

Furthermore, the significant negative relationship between quality of life and death anxiety suggests that as the quality of life improves, death anxiety decreases. This

indicates that overall life satisfaction plays an important role in mitigating fears related to death among ambulance personnel (Ji et al., 2024). While they are frequently exposed to life-threatening situations, a higher quality of life may provide them with a stronger psychological foundation, helping them to cope better with these stressors. This connection implies that individuals who experience a higher sense of well-being are better equipped to manage the emotional challenges posed by their profession (McFadden et al., 2021). Additionally, while personal beliefs, job-specific stressors, and mental health conditions still influence death anxiety (Chegini et al., 2022), quality of life remains a crucial factor in shaping how ambulance workers perceive and cope with death-related fears. This underscores the need to consider both personal well-being and other external factors in understanding and addressing death anxiety in this high-risk profession.

In this study, the role of marital status was also explored concerning quality of life, resilience, and death anxiety among ambulance personnel, providing valuable insights into how these factors differ between married and unmarried individuals. The enhanced resilience, improved quality of life, and reduced death anxiety observed among married ambulance workers can be attributed to several interconnected factors, primarily related to the emotional and social support inherent in marriage (Rusu, Bodenmann & Kayser, 2019). Marriage often provides a crucial network for emotional assistance and understanding, offering stability and security that significantly contributes to emotional well-being (Karimi, Bakhtiyari & Masjedi Arani, 2019), especially for those facing the constant stress of working in an ambulance setting. The shared responsibilities within marriage may act as a buffer against the challenges of this high-stakes profession, enabling a more balanced and sustainable approach to cope with work-related stressors (Hank & Steinbach, 2021). Additionally, the sense of purpose derived from family responsibilities may encourage ambulance workers to prioritize their mental and physical health. The shared experiences and coping mechanisms developed within the marital relationship likely foster higher resilience and a decreased fear of death. Furthermore, healthier lifestyle choices within a marital partnership may amplify these positive effects on overall well-being. However, it is important to note that individual experiences within marriage can vary, and these findings reflect general trends rather than universal outcomes.

Implication of the study

The implications of this study highlight several key areas for improving the well-being of ambulance personnel and addressing the challenges they face in their profession. First, the findings underscore the importance of fostering resilience and enhancing quality of life as effective strategies for mitigating death anxiety. This suggests that training programs should include components focused on developing resilience, coping mechanisms, and emotional support systems.

Second, the study highlights the need for organizations to offer comprehensive mental health resources tailored to the demands of emergency medical services. These resources include access to mental health professionals, counseling services, and crisis support, alongside peer support programs and well-being workshops. Third, the significant influence of marital status on resilience, quality of life, and death anxiety underscores the importance of strong social support. Therefore, initiatives that enhance family support and healthy relationships may further strengthen the emotional resilience of ambulance personnel.

Finally, the findings call for ongoing research to explore the broader range of factors influencing death anxiety, including personal beliefs and job-specific stressors. This will help develop a more holistic understanding of the psychological landscape faced by ambulance workers and inform future interventions aimed at improving their mental health and overall job performance.

Limitations

This study has several limitations that should be considered when interpreting the findings. First, the cross-sectional design limits the ability to draw causal inferences

between the variables, as it captures a snapshot in time rather than changes over time. Second, the reliance on self-reported measures may introduce bias, as participants might overestimate or underestimate their quality of life, resilience, or death anxiety due to social desirability or recall bias. Additionally, the sample was drawn from a specific geographical area, which may limit the generalizability of the results to other regions or cultures. Furthermore, the study did not account for potential confounding variables such as prior traumatic experiences, personality traits, or workplace environments, which may also influence the relationships examined.

Suggestions

Future research should consider using longitudinal designs to better understand the causal relationships among quality of life, resilience, and death anxiety. Incorporating qualitative methods, such as interviews or focus groups, could provide deeper insights into the personal experiences of ambulance personnel and the factors influencing their mental health. Expanding the sample size and diversity to include participants from various geographical locations and cultural backgrounds would enhance the generalizability of the findings.

Additionally, future studies should explore the impact of workplace interventions, peer support programs, and family dynamics, including the presence of children or minors in the household on resilience and death anxiety to identify effective strategies for promoting mental well-being in this high-stress profession. Finally, investigating other potential moderators or mediators, such as coping styles or social support, could provide a more comprehensive understanding of the factors that influence death anxiety among ambulance workers.

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Determinants of employee voice behavior among real estate personnel: Moderating role of perceived supervisor support and organization culture

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✎ **ABSTRACT.** Il presente studio ha esaminato in che modo il comportamento dei dipendenti del settore immobiliare sia influenzato dalla personalità proattiva, dalla cultura organizzativa e dal sostegno percepito da parte dei superiori. I dati sono stati raccolti da un campione mirato di 410 individui (uomini e donne, di età compresa tra i 25 e i 55 anni) impiegati presso diverse società immobiliari in Pakistan, utilizzando un approccio di ricerca correlazionale. Tra i test standardizzati utilizzati figuravano *Proactive Personality Scale*, *Organizational Culture Questionnaire*, *Perceived Supervisor Support Scale* ed *Employee Voice Behavior Scale*. I risultati ottenuti hanno dimostrato la necessità di incoraggiare inclinazioni comportamentali proattive, una supervisione di supporto e una cultura aziendale sana al fine di migliorare il comportamento di espressione nel settore immobiliare.

✎ **SUMMARY.** The current study examined how employee voice behavior among real estate employees is influenced by proactive personality, organization culture, and perceived supervisor support. Data were gathered from a purposive sample of 410 individuals (men and women, ages 25 to 55) employed by different real estate companies in Pakistan using a correlational research approach. The *Proactive Personality Scale*, *Organizational Culture Questionnaire*, *Perceived Supervisor Support Scale*, and *Employee Voice Behavior Scale* were among the standardized tests that were used. Proactive personality, perceived supervisor support, and corporate culture all strongly predicted employee voice behavior, according to hierarchical regression studies. Additionally, moderation studies showed that the association between proactive personality and voice behavior was reinforced by corporate culture and perceived supervisor support. Gender, job title, and length of employment all showed significant group differences according to multivariate analysis (MANOVA). These results demonstrate the need of encouraging proactive behavioral inclinations, supportive supervision, and a healthy company culture in order to improve voice behavior in the real estate industry.

Keywords: Proactive personality, Organization culture, Perceived supervisor support, Employee voice behavior, Real estate

INTRODUCTION

The workplace of today is very different from that of earlier decades as there is a larger need for innovation, increased decentralization and globalization (Wallace, 2022). In contemporary world, business landscape is rapidly evolving and organizations are increasingly recognizing the critical role that employees play in driving success and sustaining competitive advantage (Cetindamar Kozanoglu & Abedin, 2021). Almost all organizations are relying on their employees to use their own initiative to recognize and seize opportunities as well as to detect and resolve problems in order to be competitive in this climate (Sears, Shen & Zhang, 2018). Considering its unique work dynamics the real estate business also requires employees who are self driven and positively motivated to engaged in proactive behaviors (Hsiung, 2012). In the real estate sector (RES), employees face unique challenges due to its competitive and customer-driven nature especially those directly involved in sales and client-facing roles. They rely heavily on proactive communication and collaborative efforts to navigate the complexities of market demands, client needs, and internal organizational dynamics. Recently, there has been growing interest in understanding factors that encourage employees to actively express constructive ideas, concerns, or feedback within their workplaces- a behavior commonly referred to as employee voice behavior (EVB) (Nizam, 2022; Tedone & Bruk-Lee, 2022).

Employee voice behavior

Encouraging the workforce to voice their opinions and share their ideas can result in creative solutions, enhanced workflows, and increased productivity within the company. Consequently, a crucial component of organizational dynamics is employee voice behavior (EVB), which refers to the voluntary expression of thoughts, ideas, or concerns with the aim of enhancing organizational performance (Tedone & Bruk-Lee, 2022). EVB is necessary for the success of any organization as it plays a fundamental role in driving progress and addressing challenges. Likewise, in the real estate sector, where market trends and client demand shift frequently, employees who actively engage in voice behaviors help organizations remain flexible and seize opportunities (Kao et al., 2022). Liang, Farh and Farh (2012) argued that employees can use the prohibitive voice to voice concerns about present

dysfunctions or the promotive voice to provide constructive proposals that reflect adjustments for betterment. Both type of voice behaviors were found to be positively correlated with perceived servant leadership (Chen, Wang & Li, 2022) and increased job engagement (Khan et al., 2023).

Proactive personality

Several studies (Ayodele, Ekemode, Oladokun & Kajimo-Shakantu, 2020; Chae & Park, 2022; Chen et al., 2022) pointed out the important role of personal disposition that could influence moral and honest opinions of employees at workplace. In lieu to this consideration, proactive personality is considered as the determining factor of employee voice behavior which is described as a steady dispositional propensity of people who actively promote change in their surroundings and manage situational factors drawn upon (Wei, Li, Li & Chen, 2021). The term proactivity refers to a process that can be used for a wide range of activities, such as goal-pursuit, planning, and anticipating (Jiang, Wang, Li, Peng & Wu, 2023). Proactive individuals are able to foresee future occurrences and react in a way that promotes successful and constructive change (Chae & Park, 2022). In recent years the literature (Dua, Farooq & Rai, 2023; Mowbray, Wilkinson & Tse, 2015) have discussed important predictors of EVB in any organization. Among the predictors of EVB, personality qualities are the most significant individual aspects that precede voice. Personality traits such as extraversion (Tedone & Bruk-Lee, 2022), self-efficacy (Eibl, Lang & Niessen, 2020) and proactive personality (Sheng & Zhou, 2022). Literature (Mubarak, Khan, Yasmin & Osmadi, 2021; Nurjaman, Sandi Marta, Eliyana, Kurniasari & Kurniasari, 2019) revealed that voice behavior was significantly impacted by positive personality traits as well as supportive leadership.

Organization culture

Various studies (Adhyke, Eliyana, Sridadi, Septiarini & Anwar, 2023; Famiyeh, Asante-Darko & Kwarteng, 2018; Ibrahim, Mahmood & Bakar, 2018) pointed that organizational culture represents an organization's common values and serves as a guide for employees while they carry out tasks to fulfill the objectives or ideals of the company. An organization is typically made up of people, relationships,

authority, roles, and cooperative communication, while its culture is articulated as the vision, mission, and goals of the company including the norms, values, beliefs, expectations, presumptions, and philosophies of the individuals that comprise an organization (Brodhead, 2019; Widarko & Anwarodin, 2022). According to Saha & Kumar (2018) creative and supportive cultures have a moderating effect on the impact of affective commitment on workers' job satisfaction. Moreover, Famiyeh and colleagues (2018) aimed to comprehend the moderating effect that organizational culture has on the relationship between customer happiness and loyalty in banking industry. Ibrahim and colleagues (2018) find that only innovative culture moderates the association between strategic improvisation and institutions. Furthermore researches (Imran, Elahi, Abid, Ashfaq & Ilyas, 2022; Umrani, Kura & Ahmed, 2018) demonstrate a distinct and favorable impact of organizational culture and innovation on overall performance as creating an organizational culture that makes information easily transferable, promotes idea sharing among staff members through social interactions at work, and eases the transfer of knowledge enables staff members at all levels to contribute to operational success.

Perceived supervisor support

Additionally, another contextual factor that would strengthen the relationship between proactive personality and employee voice behavior is support being received from your immediate supervisor at workplace. It is defined as the general viewpoint of subordinates regarding the degree to which their superiors value their contributions, consider their prosperity, and provide helpful and enthusiastic assistance and the subordinates feel that their supervisors appreciate and believe in them (Akram, Kamran, Iqbal, Habibah & Atif Ishaq, 2018; Köhler, Cortina, Kurtessis & Gözl, 2015). A supervisor's certain actions can monitor an employee's level of devotion, satisfaction, and emotional involvement with their organization. While working for their company, when employees don't feel involved, it has an impact on the growth and image of the company. Researchers (Charoensukmongkol & Phungsoonthorn, 2021; Kim, 2018) have claimed that employee views about their company are positively influenced by supervisor support. According to Adhyke and colleagues (2023), transformational leadership is expected to regulate the association between proactive

personality and employee voice. According to research by Giao and colleagues (Giao, Vuong, Huan, Tushar & Quan, 2020) work-family conflict and job burnout play mediating role in the relationship between emotional intelligence and turnover intention, while perceived supervisory support has a moderating influence. According to Cangiano and colleagues (Cangiano, Parker & Yeo, 2019), there was a positive and significant correlation between affective commitment and teamwork behaviors. Pakistani researchers (Afzal, Arshad, Saleem & Farooq, 2019; Baqir, Hussain, Waseem & Islam, 2020; Zeb, Bin Othayman, Goh & Shah, 2024) also showed the effects of perceived supervisor support on organizational performance and promotes job performance.

Literature review

Previous studies revealed that employees' prohibitive and promotive voice behaviors were found to be positively correlated with perceived servant leadership and these associations were found to be mediated by increased job engagement (Chen et al., 2022; Khan et al., 2023; Mubarak et al., 2021; Nurjaman et al., 2019; Wei et al., 2021). Furthermore, it was also evident that proactive personality, psychological safety, and employee voice behavior were all fully mediated by each other (Chae & Park, 2022; Elsaied, 2019). According to a trait-based viewpoint, a proactive personality is a steady temperament marked by initiative, a focus on the future, and a desire to alter one's surroundings so when people have possibilities to act in accordance with their dispositional inclinations, personality traits are represented through behavior. Because initiative and flexibility are crucial in dynamic work contexts like the real estate industry, employees with a proactive personality are consequently more likely to recognize issues, suggest solutions, and actively participate in voice behavior. Consequently, research hypotheses was proposed to examine the relationship between the proactive personality and employee voice behavior.

H1: Proactive personality positively predicts employee voice behavior.

According to a study, creative and supportive cultures have a moderating effect on the workers' job satisfaction (Saha & Kumar, 2018). A research by Ibrahim et al. (2018) shows that only innovative culture moderates the association between strategic improvisation and institutions. Furthermore research findings (Famiyeh et al., 2018; Imran

et al., 2022; Umrani et al., 2018) demonstrate a distinct and favorable impact of organizational culture and innovation on overall performance of staff members at all levels to contribute to the operational success. From theoretical viewpoint, organizational culture indicates whether or not voice conduct is valued in the workplace. Proactive individuals can voice their opinions more freely in supportive and creative organizations because they are more likely to legitimize employee input and lower the perceived risks of speaking up. On the other hand, even among proactive people, vocal behavior may be suppressed in strict or hierarchical environments. Therefore, it is anticipated that corporate culture would act as a boundary condition that affects how strongly proactive personality and employee voice behavior are related. Accordingly, the following hypothesis is proposed.

H2: Organization culture moderates the relationship between proactive personality and employee voice behaviors.

According to Adhyke et al. (2023), transformational leadership is expected to regulate the association between proactive personality and employee voice. Research studies find that perceived supervisory support has a moderating influence and there is positive and significant correlation between affective commitment and teamwork behaviors (Cangiano et al., 2019; Giao et al., 2020). Pakistani studies also showed that whereas empowerment and self-confidence both partially influence the associations between supervisor support and job performance, supervisor support it promotes job performance (Afzal et al., 2019; Baqir et al., 2020; Zeb et al., 2024). The degree to which workers feel their managers appreciate their efforts and are concerned about their welfare is reflected in perceived supervisor support. Employees who perceive high levels of supervisor support are more likely to respond by good, discretionary behaviors, such as speaking out, according to Social Exchange Theory. Speaking up also frequently entails interpersonal risk, particularly when recommendations contradict established norms or authority. By promoting open communication and reacting positively to employee input, supportive managers can reduce this danger. Therefore, it is anticipated that the translation of proactive intentions into real voice behavior will be strengthened by perceived supervisor support. As a result, the following hypothesis is proposed.

H3: Perceived supervisors support moderates the relationship between proactive personality and employee voice behaviors.

Theoretical basis of the present study

The present study derives its theoretical assumptions based on Trait Activation Theory (TAT) by Tett and Burnett (2003) to explain the predicting role of proactive personality impacting employee voice behaviours and that organizational cues influences this relationship. This theory holds that personality traits operate as latent behavioral potentials that become visible when pertinent environmental cues are available. In this sense, personality traits are essentially latent potentials that can be activated in response to environmental cues that are relevant to the trait and people with stable personality qualities are more likely to endure and exhibit consistent behavior in a variety of contexts (Nurjaman et al., 2019).

Additionally, organizational culture is an important activation cue. An environment where proactive tendencies are accepted as proper and advantageous is created by a supportive organization culture that emphasizes transparency, communication, and innovation. Because the situational context encourages initiative-taking rather than penalizes it, such workplaces convey trait-relevant cues under TAT, boosting the likelihood that proactive employees will participate in voice behavior. Researches show that organizational cues that either initiate or restrict trait-expressive actions affect how each particular trait is expressed (Hoogh et al., 2021). Also Tett and colleagues (Tett, Toich & Ozkum, 2021) finds that people respond to pertinent situational inputs by exhibiting traits that correspond with their job behaviors. When situational cues highlight chances for an employee's qualities and do not prevent them, those traits are more likely to manifest as work behaviors (Song, Tian & Kwan, 2022).

Moreover, trait activation is influenced by perceived supervisor support, which serves as an interpersonal cue. In addition to lowering perceived interpersonal risk and signaling psychological safety, supportive supervisors also validate upward communication. By reassuring workers that their voice behavior will be viewed favorably rather than as disobedience or disturbance, this support enhances the activation of proactive qualities in terms of TAT. Therefore, when supervisor behavior is consistent with trait-relevant expectations, proactive employees are more likely to speak up. A theoretically coherent foundation for the proposed interactions is provided by the fact that proactive personality predicts employee voice conduct more strongly

in settings where supportive culture and managers activate the attribute (Gottfredson & Reina, 2020). Consequently, another imperative argument is that the trait's relevance and the situation's relevance must coincide, meaning that the possessor of the trait will be able to react to the situation's cues in a way that makes sense (Judge & Zapata, 2015; Philip, 2023).

Rationale of the study

By expanding current theoretical models to a setting marked by significant uncertainty, performance pressure, and substantial boundary-spanning interactions, the current study adds to the body of knowledge on employee voice behavior. While previous studies on employee voice have mostly concentrated on developed economies and stable, formalized organizational settings, much less attention has been paid to industries where workers operate under commission-based incentives, informal structures, and extreme market volatility, conditions that are typical of Pakistan's real estate sector. Also, workers in this sector deal with a wide range of demographics, which calls for a mix of organizational and personal characteristics that can have a big impact on how well they perform at work. By analyzing the interaction between organizational and personal characteristics, this study fills a vacuum in the literature. Specifically, it focuses on how proactive personality affects employee voice behavior among real estate employees.

Additionally, a proactive mentality has become more crucial for encouraging creativity, flexibility, and employee voice behavior in today's fast-paced and competitive workplace. By investigating how proactive personality affects employee voice behavior, this study seeks to close the gap given the variety of difficulties and interactions real estate employees encounter. By doing this, it aims to offer insights that can improve hiring procedures and advance organizational efficacy in this expanding industry. Moreover, this study aims to clarify how organizational elements can improve real estate worker's productivity by examining the impacts of organizational culture and perceived supervisor support. In the real estate sector, where sustaining a competitive edge depends on efficient employee performance, it is especially important to comprehend these dynamics.

Lastly, demographics play a critical part in the real

estate industry because employee performance can be greatly impacted by variables including gender, employment experience, job title, and organizational longevity. In order to better understand how these demographic factors affect employee voice behavior, this study takes them into account. The research attempts to offer a more thorough understanding of the elements influencing employee effectiveness in the real estate sector by investigating these dynamics.

METHOD

Sample

Purposive sampling was used to gather information from real estate agents employed by registered real estate firms in Pakistan. Given the study's focus on workers directly involved in sales-related activities, where employee voice behavior and proactive personality are most pertinent, purposeful sampling was deemed suitable. Participants were chosen from a variety of firms with different job hierarchies and sizes in order to minimize sampling bias. The final sample of 410 employees ranged in age from 25 to 55 years ($M = 31.45$, $SD = 6.39$), with 220 males (53.6%) and 190 females (46.3%). 78.0% of respondents had a graduate degree, and 21.9% had finished their postgraduate studies. Managers (36.9%) and sales executives (63.1%) with organizational tenure ranging from one to more than five years were among the participants. The range of total work experience was 1 to 12 years ($M = 5.6$, $SD = 4.53$). The size of the participating organizations ranged from 50 to over 250 workers. To improve sample uniformity and relevance, explicit inclusion criteria were used. To guarantee enough acquaintance with organizational procedures and managerial relationships, only workers with at least a year of experience in their present company were included. Because their working conditions differ significantly from those of organizational employees, employees who were primarily involved in administrative duties and independent real estate brokers were excluded. Respondents were made aware of the study's goal, the confidentiality of their answers, and their freedom to withdraw at any time. Participation in the study was entirely voluntary. The ethics review committee granted ethical approval for the data collection, and data were gathered in compliance with accepted ethical standards for social science research.

Measures

Demographic sheet. The demographic sheet inquired the respondents about their age, gender, education, job designation, location of organization, job experience overall and time served in current organization.

Proactive Personality Scale. To assess the proactive personality traits in employees of the real estate sector, the Proactive Personality Scale (Bateman & Crant, 1993) was utilized. The scale comprises 17 items to be rated on a 4-point Likert scale (1 = strongly disagree and 4 = strongly agree) with a possible score range between 17 to 119. A high score on the scale indicates more inclination for a proactive personality. Bateman and Crant (1993) have reported an alpha coefficient of the scale .81, while the alpha coefficient of .85 was achieved for this scale in the current study.

Organizational Culture Scale. To assess the environment of the organizational culture of real estate companies, Organizational Culture Scale developed by Gosh and Srivastava, (2014) was utilized. The scale comprises 23 items, and it has 7 dimensions including participation, respect for individuals, attitude to risk, action orientated, trust, openness, and power distance. It is a 4-point Likert scale where 1 = strongly disagree and 4 = strongly agree, with a possible score range between 23 to 115. A high score on this scale indicates that the organization has a more positive culture. Gosh and Srivastava (2014) reported an adequate alpha coefficient of .81 for the scale, while in the current study, an alpha coefficient of .70 was achieved.

Perceived Supervisor Support Scale. To estimate the level of support provided by supervisors to the employees in their current organization, the Perceived Supervisor Support Scale (Eisenberger et al., 1996) was utilized. It is a 4-point where 1 = strongly disagree and 4 = strongly agree. Scores on a scale range between 8 to 56. A high score on the scale indicates a favorable perception and a low score indicates an unfavorable perception of supervisory support. The reliability of this scale was .90 as reported by Eisenberger and colleagues (Eisenberger, Rhoades Shanock & Wen, 2020) while the alpha coefficient of .77 was achieved for this scale in the current study.

Employee Voice Behavior Questionnaire. To estimate how much the employees are involved in voice behaviors in real estate organizations, the Employee Voice Behavior Questionnaire (Liang et al., 2012) was utilized. It comprises 10 items. It is a 4-point where 1 = strongly disagree and 4 = strongly agree. Individuals who score high on the scale

represent that they are highly involved in voice behaviors within an organization. The reliability of this scale was reported as .87 by Liang et al. (2012), whereas an alpha coefficient of .84 was achieved in the current study.

Procedure

After receiving approval from the appropriate institutional ethics review committee, data collection was completed. The chief executive officers (CEOs) or authorized representatives of particular real estate organizations were first asked for written consent. A concise research summary detailing the study's goals, methods, and ethical precautions was given to management following organizational approval. Considering the intensive and field-based nature of their employment, participants were approached during scheduled trips and recruited through collaboration with organizational contacts. All participants were made fully aware of the study's objectives, the fact that participation was entirely voluntary, and their freedom to discontinue participation at any time without incurring any fees. Before distributing the questionnaire, each participant provided written informed consent. In order to maintain anonymity and confidentiality, no personal data were gathered and participants were guaranteed that their answers would only be utilized for research study. There were no time restrictions on the completion of the questionnaire, and participants were encouraged to answer honestly. 425 questionnaires in all were sent out and returned. A valid response rate of almost 96.5% was obtained by keeping 410 acceptable questionnaires for final analysis after they were screened for incomplete, inconsistent, or invalid responses. Participants were acknowledged for their participation and time when the data gathering process was over. Additionally, formal letters of gratitude were addressed to the management of the participating organizations for helping to make the research possible.

RESULTS

Data analysis

To assess the variance caused by the variables in predicting employee voice behavior and execute hypothesis

testing, multiple hierarchical regression was using adopting SPSS Version 23.

Descriptive statistics and bivariate correlations among study variables

Table 1 shows that the alpha coefficients of all the instruments range from .69 to .85 indicating them as reliable (Field, 2013). As a general guideline, a skewness value between -1 and +1 is considered excellent (Hair et al., 2022), whereas an accepted range of value for kurtosis is -2 to +2 (George & Mallery, 2009). This indicates that data was normally distributed. Proactive personality has positive correlation with organization culture, perceived supervisor support and employee voice behavior.

Table 2 represents multiple hierarchal regression analysis of employee voice behavior. In step 1, proactive personality accounts for 23% variance in predicting employee voice behavior with proactive personality positively predicting employee voice behavior (Hypothesis 1). In step 2, organization culture is added which accounts for a 30% variance in predicting employee voice behavior, and change R^2 accounted for an additional 7% variance (Hypothesis 2). In step 3, perceived supervisor support is added which explains 34% variance in predicting employee voice behavior, and change R^2 depicted a further 4% variance (Hypothesis 3).

Table 3 illustrates the moderating effect of organization culture and perceived supervisor support on employee

voice behavior. The major effect of organization culture and perceived supervisor support is shown to be significantly positive which indicates that effective organization culture predicts and positively perceived supervisor support predicts high employee voice behavior.

Figure 1 shows that as proactive personality increases, employee voice behavior also increases across all levels of organizational culture. However, the slope of the line is steeper for higher levels of employee voice behavior. This suggests that the positive relationship between proactive personality and employee voice behavior is stronger when real estate employees perceive their organization's culture as more optimistic. In contrast, the relationship is weaker under conditions of low perceived organizational culture. This indicates that organizational culture amplifies the positive effect of proactive personality on employee voice behavior.

Figure 2 demonstrates that as proactive personality increases, employee voice behavior also increases across all levels of perceived supervisor support. However, the slope of the line is steeper for higher levels of employee voice behavior. This suggests that the positive relationship between proactive personality and employee voice behavior is stronger when real estate employees perceive their supervisor's support as more positive. In contrast, the relationship is weaker under conditions of low perceived supervisor support. This indicates that perceived supervisor support strengthens the positive effect of a proactive personality on employee voice behavior.

Table 4 The overall multivariate effect is significant with a large effect size, indicating that the combined effect

Table 1 – Descriptive statistics and alpha reliability coefficients of instruments

| Variable | α | M | Skewness | Kurtosis | 1 | 2 | 3 | 4 |
|------------------------------|----------|-------|----------|----------|-------|-------|-------|---|
| Proactive personality | .85 | 50.05 | -.21 | -1.32 | - | | | |
| Organization culture | .69 | 23.25 | -.14 | -.12 | .51** | - | | |
| Perceived supervisor support | .77 | 60.57 | -.16 | .29 | .38** | .48** | - | |
| Employee voice behavior | .84 | 30.86 | .19 | .70 | .47** | .42** | .68** | - |

** $p < .01$

Table 2 – Multiple hierarchical regression analysis predicting employee voice behavior

| Variables | Criterion variable: employee voice behavior | | | | | | |
|------------------------------|---|-------|-------|---------|----------|-----------------------|--------------|
| | β | 95%CI | | β | <i>F</i> | <i>R</i> ² | ΔR^2 |
| | | LL | UL | | | | |
| Step 1 | | | | | 23.34** | .23 | .23 |
| Constant | 12.99** | 8.88 | 17.09 | | | | |
| Proactive personality | .37** | .30 | .43 | .47** | | | |
| Step 2 | | | | | 27.98** | .30 | .07 |
| Constant | 9.25** | 5.26 | 13.37 | | | | |
| Proactive personality | .30** | .24 | .37 | .39** | | | |
| Organization culture | .33** | .22 | .47 | .26** | | | |
| Step 3 | | | | | 24.96** | .34 | .04 |
| Constant | 8.49** | 3.58 | 5.56 | | | | |
| Proactive personality | .25** | .18 | .33 | .33** | | | |
| Organization culture | .15** | .08 | .22 | .18** | | | |
| Perceived supervisor support | .14** | .07 | .21 | .17** | | | |

Legenda. CI = confidence interval; LL = lower level; UL = upper level.

***p* < .05

of demographics significantly differs by the intercept of the model. Gender differences and job designations show a significant effect with a moderate effect size, meaning that both influence the employee voice behaviors. The duration of the job in the present organization shows a very strong significant effect with a large effect size, meaning it strongly impacts the employee voice behaviors. The interaction effect of gender, job designation, and duration of job in the current organization also shows significant effects on study variables, particularly employee voice behavior.

DISCUSSION

The results of this study show that among real estate workers, proactive personality significantly predicts employee voice behavior. According to Trait Activation Theory (Tett & Burnett, 2003), proactive personality is a latent behavioral potential that manifests when situations support taking initiative. In this study, voice behavior emerged when workers viewed circumstances that encouraged independent judgment and productive dialogue. Therefore, proactive

Table 3 – Moderating role of organization culture and perceived supervisor support in employee voice behavior from proactive personality

| Variables | Criterion variable: employee voice behavior | | | |
|--|---|--------------------|-------------|-------|
| | β | <i>p</i> | 95%CI | |
| | | | LL | UL |
| Constant | 26.59 | .00 | 31.32 | 32.71 |
| Proactive personality | 4.86 | .00 | .15 | .44 |
| Organization culture | .80 | .00 | .02 | .31 |
| Proactive personality × Organization culture | .05 | .01 | .04 | .16 |
| $R^2 = .33$ | | $\Delta R^2 = .03$ | $F = 35.78$ | .00 |
| Constant | 68.80 | .00 | 21.13 | 30.71 |
| Proactive personality | .31 | .00 | .18 | .44 |
| Perceived supervisor support | .24 | .02 | .31 | .46 |
| Proactive personality × Perceived supervisor support | .05 | .01 | .01 | .09 |
| $R^2 = .30$ | | $\Delta R^2 = .04$ | $F = 6.41$ | .00 |

Legenda. CI = confidence interval; LL = lower level; UL = upper level.

Figure 1 – Moderation graph illustrating the interaction effect of organizational culture on the relationship between proactive personality and employee voice behavior

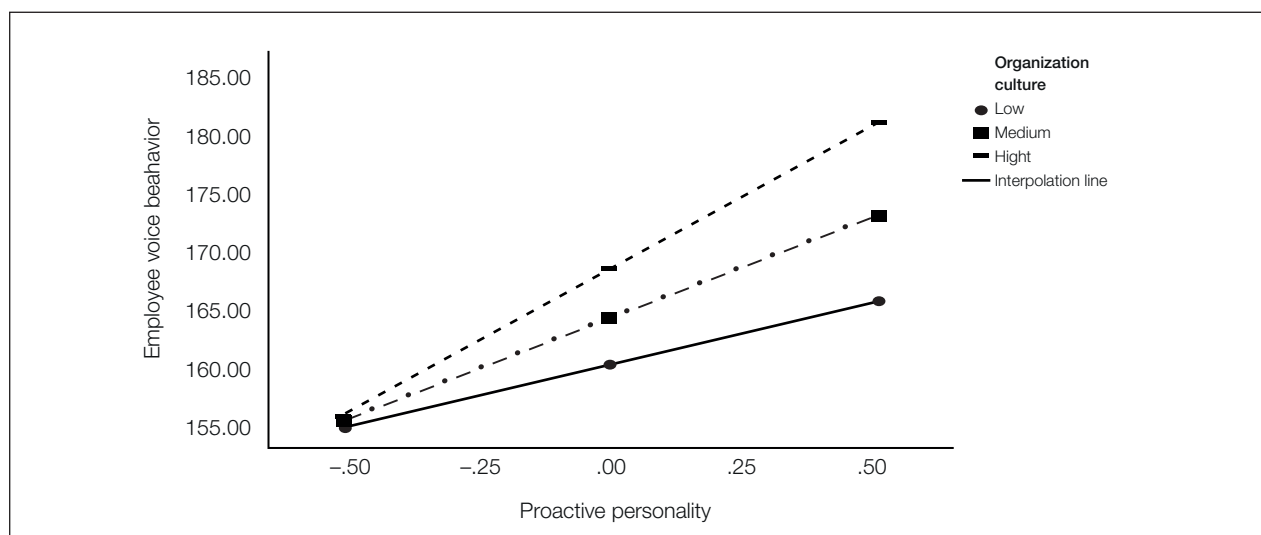
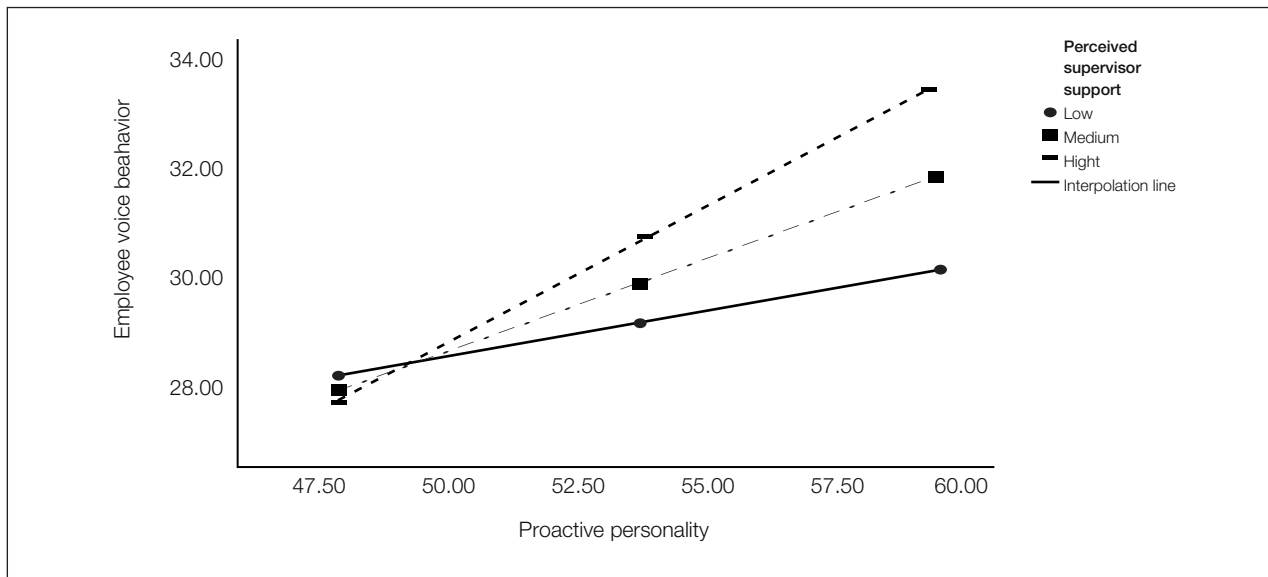


Figure 2 – A moderation graph illustrating the interaction effect of perceived supervisor support on the relationship between proactive personality and employee voice behavior



personality does not function consistently; rather, it is triggered when workers perceive their voice as appropriate, secure, and appreciated in their immediate workplace (Bilal et al., 2021). The theory further claims that individuals with proactive personalities are inclined to indulge in behaviors that demand more integrity and honesty (Meijerink, Bos-Nehles & De Leede, 2020). This implies that employees take self-control and anticipate problems rather than passively wait for problems that can occur or for instructions that can be given (Coun, Peters, Blomme & Schaveling, 2021).

Findings also revealed that organizational culture positively predicted employee voice behavior. This interpretation is supported by organizational culture's moderating function. A culture that promotes psychological safety and open communication sends out trait-relevant cues that support the expression of proactive inclinations. According to TAT, these settings improve the "fit" between situational relevance and trait potential, increasing the possibility that proactive workers will transfer their dispositions into voice behaviors (Song et al., 2022; Tett et al., 2021). This implies that businesses need to foster contextual settings that enable proactive features to be displayed meaningfully, rather than just relying on having proactive personnel (Xu, Loi & Chow, 2022). As a result,

culture serves as both an activation mechanism and a predictor, allowing trait-driven behaviors to manifest. There is a positive correlation between employee voice behavior and organizational culture, where organizational culture enhances the relationship between proactive personality and voice behavior. In the context of employee voice behavior, a supportive organizational culture provides such cues, enabling employees, particularly those with proactive personalities, to express their opinions, contribute ideas, and engage in constructive actions that benefit the organization.

Moreover, findings revealed that perceived supervisor support moderates the relationship between proactive personality and employee voice behavior among real estate employees. This finding can be explained through the lens of two psychological theories. Firstly, the Conservation of Resource Theory posits that social support in the workplace restricts the negative impact of emotional exhaustion related to stressful job-related activities (Zhou, Ma & Dong, 2018). It shows that when employees feel supported, they are more likely to conserve their emotional resources and engage in constructive behaviors like employee voice, even in demanding situations (Meijerink, et al., 2020). Another theory that explains this finding is the Organizational Support Theory which assumes that individuals form

Table 4 – Multivariate analysis of variance on demographic variables

| Source | Variables | W λ | df | F | P | η^2 |
|---|------------------------------|-------------|----|----------|-----|----------|
| Intercept | | .10 | | 7316.10 | .00 | .99 |
| | Proactive personality | | 1 | 16422.01 | .00 | .98 |
| | Organization culture | | 1 | 11082.93 | .00 | .97 |
| | Perceived supervisor support | | 1 | 21665.28 | .00 | .98 |
| | Employee voice behavior | | 1 | 11296.18 | .00 | .97 |
| Gender | | .65 | | 24.77 | .03 | |
| | Proactive personality | | 1 | 13.30 | .01 | .20 |
| | Organization culture | | 1 | 22.57 | .00 | .18 |
| | Perceived supervisor support | | 1 | 9.97 | .00 | .32 |
| | Employee voice behavior | | 1 | 18.54 | .00 | .26 |
| Job designation | | .80 | | 8.59 | .00 | |
| | Proactive personality | | 1 | 24.56 | .00 | .14 |
| | Organization culture | | 1 | 13.58 | .00 | .08 |
| | Perceived supervisor support | | 1 | 17.88 | .00 | .21 |
| | Employee voice behavior | | 1 | 9.98 | .00 | .19 |
| Job duration | | .22 | | 65.43 | .00 | |
| | Proactive personality | | 2 | 53.30 | .00 | .15 |
| | Organization culture | | 2 | 79.82 | .00 | .20 |
| | Perceived supervisor support | | 2 | 22.78 | .00 | .43 |
| | Employee voice behavior | | 2 | 45.90 | .00 | .38 |
| Gender \times Job designation | | .74 | | 24.51 | .03 | |
| | Proactive personality | | 1 | 15.72 | .02 | .11 |
| | Organization culture | | 1 | 22.26 | .03 | .09 |
| | Perceived supervisor support | | 1 | 12.76 | .01 | .15 |
| | Employee voice behavior | | 1 | 14.38 | .00 | .13 |
| Job designation \times Job duration | | .63 | | 21.15 | .00 | |
| | Proactive personality | | 2 | 14.73 | .01 | .12 |
| | Organization culture | | 2 | 13.87 | .01 | .10 |
| | Perceived supervisor support | | 2 | 14.38 | .00 | .15 |
| | Employee voice behavior | | 2 | 12.05 | .00 | .09 |
| Gender \times Job duration | | .43 | | 54.30 | .00 | .12 |
| | Proactive personality | | 2 | 28.83 | .00 | .14 |
| | Organization culture | | 2 | 14.58 | .02 | .09 |
| | Perceived supervisor support | | 2 | 84.32 | .00 | .08 |
| | Employee voice behavior | | 2 | 21.22 | .01 | .12 |
| Gender \times Job designation \times Job duration | | .12 | | | .00 | .25 |
| | Proactive personality | | 2 | 87.52 | .00 | .14 |
| | Organization culture | | 2 | 111.28 | .00 | .23 |
| | Perceived supervisor support | | 2 | 98.90 | .00 | .19 |
| | Employee voice behavior | | 2 | 126.85 | .00 | .48 |

Legenda. df = degree of freedom.

a global evaluation regarding the degree to which their organization values their contributions and cares about their well-being (Potipiroon & Faerman, 2020). This implies that supervisor support enhances employee's perception of the organization, making them feel more valued and secure, thereby encouraging them to proactively share their ideas and concerns, which strengthens their overall voice behavior (Imran et al., 2020).

In terms of demographic factors, the MANOVA results indicate that differences in voice behavior are correlated with gender, job designation, and length of employment. However, care should be taken when interpreting these patterns. Although the present research shows differences, it does not prove directionality or causality. These variations may be caused by elements like hierarchical power, tenure-related expertise with organizational processes, or gendered norms in workplace communication, but further research would be required to support such assertions. As a result, the current results should be interpreted as suggestive rather than final, serving as a foundation for additional research rather than firm generalization. Overall, the results point to employee voice as a result of trait–context alignment rather than just personality. Therefore, companies that want to improve voice behavior must make investments in supervisory support procedures and foster cultures that value initiative. By doing this, they establish settings where proactive personality is not just present but also resourced, activated, and focused on positive organizational outcomes.

Limitations and suggestions

Undoubtedly there are few potential shortfalls of the current study which may require cautious approach to generalize the findings. First off, the study used a cross-sectional research approach, which limits the capacity to deduce causal connections between organizational characteristics, proactive personality, and employee voice behavior. To better understand how these associations change over time, longitudinal or experimental designs may be used in future research. Secondly, all of the data were gathered using self-report measures, which could introduce response biases including selective recall or social desirability. Additionally, this dependence on a single data source raises the risk of common method variance (CMV), which could exaggerate correlations between variables. Future study could

reduce CMV and improve the internal validity of results by using supervisor ratings, peer evaluations, or multi-source assessment techniques.

Thirdly, only real estate sales professionals made up the sample. Diverse work environments and employment expectations are experienced by sales and marketing personnel in various industries, which may result in differing behavioral patterns. As a result, the results might not be entirely applicable to workers in other industries. External validity would be improved by broadening the sample to include a variety of industries and organizational contexts. Additionally, employee voice behavior may be influenced differentially among real estate businesses by contextual factors as organizational structures, economic factors, and regional market situations. Therefore, in order to better capture these contextual dynamics, future study should take into account more extensive data collection from various locations and organizations. Finally, other potentially significant factors including perceived employability, job stability, and market competitiveness were not taken into consideration in the study. A more thorough knowledge of how proactive qualities and organizational settings interact to shape voice behavior may be obtained by combining these contextual factors with longitudinal techniques.

Implications

The results of this study have a number of theoretical ramifications for organizational psychology, especially when it comes to comprehending the circumstances in which proactive personality translates into employee voice behavior. First, the findings corroborate Trait Activation Theory (Tett & Burnett, 2003) by showing that proactive dispositions are not enough to predict vocal action on their own; instead, they need supportive organizational cues to materialize behaviorally. By offering empirical proof that trait context alignment is essential to the activation of proactivity, this adds to the body of knowledge by supporting the theoretical claim that dispositional traits only have an impact when situational relevance is established. Second, the moderating effects of supervisor support and organizational culture emphasize the importance of combining Conservation of Resources Theory with Trait Activation Theory. While COR emphasizes how perceived support maintains psychological resources that allow employees to participate in voice despite possible

interpersonal hazards, TAT outlines the activation conditions under which qualities become manifested. By demonstrating how relational cues (supervisor support) and structural cues (culture) work together to scaffold the emergence of proactive dispositions, this combined theoretical interpretation enhances organizational psychology discourse.

Third, by demonstrating that voice behavior should be understood as a result of individual–context interaction rather than just as a choice communication act, the study contributes to a larger body of literature on employee voice. The present results support the idea that perceptions of safety, legitimacy, and reciprocity in the workplace

influence proactive behavior. By doing this, the study adds to the current theoretical discussions on how much speech is influenced by contextual affordances versus internal motivations. Collectively, these implications enhance organizational psychology by showing how dispositional, relational, and environmental factors interact to produce employee voice behavior. As a result, the study advances theoretical understanding and provides a conceptual framework for further research into how companies may better comprehend, rather than just manage the circumstances that allow employees to express constructive voice.

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Translation, cross-language validation, and psychometric evaluation of the Spousal Social Support Questionnaire in Urdu

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✦ **ABSTRACT.** Il presente studio ha mirato a tradurre e a convalidare in Urdu lo *Spousal Social Support Questionnaire* per utilizzarlo in un contesto culturale pakistano. Il questionario valuta cinque aspetti del sostegno coniugale: tangibile, informativo, relazionale, emotivo e di autostima. Per garantire l'equivalenza semantica e concettuale è stata seguita la metodologia di traduzione avanti-indietro di Brislin (1976). Per determinare l'equivalenza tra le lingue, gli stessi partecipanti ($N = 365$) hanno compilato il questionario nelle versioni originale in inglese, nella traduzione in Urdu (avanti) e in quella in inglese (indietro). L'analisi della coerenza interna, le correlazioni di Pearson tra le versioni linguistiche e l'analisi fattoriale confermativa (CFA) hanno costituito tutti elementi della valutazione psicométrica. I risultati hanno dimostrato che la versione in Urdu presenta una eccellente affidabilità per la valutazione dell'assegno di mantenimento al coniuge in Pakistan.

✦ **SUMMARY.** In order to use the *Spousal Social Support Questionnaire* (Xu & Burleson, 2001) in a Pakistani cultural setting, the current study sought to translate and cross-language validate it into Urdu. Five aspects of spousal support are evaluated by the questionnaire: tangible, informational, network, emotional, and esteem support. To ensure semantic and conceptual equivalency, bilingual experts and subject matter specialists were involved in the translation process, which adhered to Brislin's (1976) forward-backward translation methodology. To determine cross-language equivalency, the same participants ($N = 365$) filled out the questionnaire in its original English, forward-translated Urdu, and backward-translated English versions. Internal consistency analysis, Pearson correlations between language versions, and confirmatory factor analysis (CFA) were all part of the psychometric evaluation. The results demonstrated that the Urdu version had excellent reliability (Cronbach's $\alpha = .86-.96$). Strong and statistically significant cross-language correlations were found between the total and subscale scores, indicating that the versions were equivalent. With a good model fit ($\chi^2/df = 2.1$, CFI = .94, RMSEA = .05), CFA validated the initial five-factor structure. Significant positive correlations with the Satisfaction with Life Scale ($r = .63, p < .01$) provided additional support for convergent validity. Overall, results show that the *Spousal Social Support Questionnaire* in Urdu is a valid and dependable tool for evaluating spousal support in Pakistan.

Keywords: Spousal support, Scale translation, Cross-language validation, Psychometric properties, Confirmatory factor analysis, Urdu version, Pakistan

INTRODUCTION

Within the realm of psychology, studies conducted internationally, collaboratively, and across different cultures emphasize the significance of translating and validating psychological measures in the native language of the target culture under investigation (Maneesriwongul & Dixon, 2004). This approach serves to surmount language obstacles and guarantees precise evaluation of study variables within distinct cultural frameworks, including the context of Pakistan.

The technique stated by Brislin (1976) is followed for translating research instruments into Urdu, the national language of Pakistan. In cross-cultural research, this process ensures the high quality of instrument translation. However, it is crucial to get an agreement among experts on translation-related issues and carefully record the proof of the validity and reliability of the translated instruments (Maneesriwongul & Dixon, 2004).

In their work, Jamadin and Noordin (2018) presented a concise summary of the techniques and procedures employed in translating scales. Additionally, they shed light on the obstacles encountered during the translation process. Bilingual and bicultural experts frequently utilize diverse approaches when translating quantitative research instruments, as recommended by various field experts (Mallinckrodt & Wang, 2004).

The process of indigenizing psychological instruments, including their content, should be accompanied by strong psychometric properties, as emphasized by Khan and Batool (2013). This ensures that the translated instruments maintain reliability and validity as measures within the particular cultural context.

Translation and validation of the Xu and Burleson (2001) *Spousal Social Support Questionnaire* are the main goals of the current study. This questionnaire comprises two parts: the Experienced part assesses the level of spousal social support individuals receive from their partners, while the Desired part determines the level of spousal social support they desire to receive.

In modern marriage relationships, Information and Communication Technologies (ICTs) are at the forefront in determining the ways in which couples offer and receive support. ICTs encompass devices like mobile phones, instant messaging software (e.g., WhatsApp, Telegram), video calling apps (e.g., Zoom, Skype, Google Meet), and

social networking platforms (e.g., Facebook, Instagram). These sites enable spouses to trade emotional support (in the form of affectionate messages), instrumental support (exchanging reminders or organizing household chores online), and informational support (passing on health- or work-related information). For spouses living apart because of work, studies, or migration, ICTs are the main medium for sustaining marital relationship and emotional health (Coyne, Stockdale, Busby, Iverson & Grant, 2011; Hertlein & Stevenson, 2010; Stafford, 2010). Therefore, ICTs directly correspond to the constructs assessed in the Spousal Social Support Questionnaire, further justifying the need for translating this instrument into Urdu to measure culturally appropriate assessment.

The assessment of spousal social support in our study will utilize the Spousal Social Support Questionnaire developed by Xu and Burleson (2001). Since 2001, this scale has been translated into several languages, including Chinese, Turkish, Hindi, among others, to examine levels of spousal support across various cultural contexts.

The questionnaire focuses on five domains of marital life, each representing a specific type of support:

- emotional support: demonstrating care and compassion for another person;
- esteem support: providing messages that promote one's skills, abilities, and intrinsic value;
- network support: creating a sense of social connection and belonging;
- informational support: providing factual information, advice, and appraisals for situations of concern;
- tangible support: offering material assistance, such as goods, services, or resources.

By employing this questionnaire, the study aims to assess the levels of spousal support in these five domains within the context of our specific sample.

PROCEDURE

In present study, the Spousal Social Support Questionnaire was translated into Urdu language so that to be used in Pakistani context for locally married individuals. The authors of original questionnaire in English have passed away and the scale is considered as open to be used by any researcher, so there was no need to attain formal permission from authors for translation of questionnaire into Urdu

language. Following protocols were undertaken to translate the questionnaire into Urdu language.

Phase I: Urdu language translation of the questionnaire

Step 1: Selection of translators. Team of translators was selected keeping in view their education (at least post graduation), proficiency in both source (English) and target (Urdu) language (bilingual), and technical knowledge of the subject (psychology and linguistics). Forward translation design was used in order to minimize the drawbacks of design, the translators were selected on the basis above mentioned criteria. Five translators were selected (one Urdu linguistic professional, two English language professionals, and 3 PhD scholars in Psychology). Instructions regarding aim and process of research were given in both verbal and written format to all the selected translators individually.

Step 2: Process of translation. Individual translation and feedback were received from all the translators individually. After compiling all translation versions into one document, experts of judges/subject matter experts (SMEs) were approached for the selection of best translated items of questionnaire.

Step 3: Subject matter experts' opinion. The team of three members (one Professor in Psychology, one Lecturer in Psychology and one PhD scholar) who were bilingually proficient was constituted as Subject Matter Experts (SMEs). The committee reviewed all the translations and selected the best translated item,

Step 4: Back translation. To assess the compatibility of translated (Urdu) with the original (English) version, items of Spousal Social Support Questionnaire were back translated (English) by four team members, following the procedure that has been mentioned in step 1. These team members were different from those who did forward translations.

Step 5: Subject matter experts' opinion. Three expert opinions were taken from one Professor and two PhD scholars to review the back translations.

Results. The Spousal Social Support Questionnaire was successfully translated into Urdu language, keeping in mind the Pakistani context regarding spousal relationships.

Phase II: Evaluation of the scales' cross-language validity

In order to gain cross-language validity, a deep back-translation and equivalence-testing process was utilized. Following the first translation into Urdu, a native English-speaking linguist with a background in psychology conducted the back translation of the Urdu version into English. The back-translated version was compared by an independent panel of bilingual professionals with the original to ascertain semantic, conceptual, and cultural equivalence. Differences were clarified and resolved through consensus.

The same participants filled out the Spousal Social Support Questionnaire in its original English, forward-translated Urdu, and backward-translated English versions in order to demonstrate cross-language equivalency. Direct comparison of participant responses across language versions was made possible by this within-subject design. To evaluate cross-language consistency, Pearson correlation coefficients between corresponding total and subscale scores were calculated. Further proof of structural equivalency between language versions was provided by confirmatory factor analysis (CFA), which was used to investigate whether the Urdu version maintained the original five-factor structure.

Phase III: Identifying the psychometrics of the scale's translated version

The reliability of the translated version of the scale was assessed using SPSS-26, a statistical software package commonly used for data analysis. This process involved calculating various measures of internal consistency, such as Cronbach's alpha, to determine the reliability of the scale items within each version.

Using AMOS-20.0, a programme frequently used for structural equation modelling, confirmatory factor analysis (CFA) was carried out to verify the factor structures of the scales. CFA is a statistical technique that examines the fit between the observed data and the hypothesized factor structure. It allows researchers to assess whether the data support the proposed factor structure of the scales.

By conducting CFA in AMOS-20.0, researchers were able to test the goodness-of-fit of the factor structure and determine if the observed data align with the expected

relationships between the items and their respective factors. This analysis provided evidence of the validity of the factor structure of the scales, confirming that the items were appropriately grouped into their respective subscales.

RESULTS

The results of the study revealed significant positive correlations among the original version of the Spousal Social Questionnaire, the forward-translated Urdu version, and the backward-translated English version. These correlations were observed for both the overall scale and its individual subscales, including emotional support, esteem support, network support, informational support, and tangible support.

The significant positive correlations indicated in Table 1, that the measurements obtained from the different versions of the questionnaire were consistent with each other. This suggests that the translated versions captured the intended constructs of spousal social support in a manner that was like the original version. The correlations further support the validity of the translations and provide evidence for the cross-language equivalence of the questionnaire and its subscales.

The reliability coefficients and skewness range of the translated research instrument are presented in Table 2. The findings show that scale and its subscales have an adequate degree of reliability. The scale's internal consistency is shown by the Cronbach's alpha coefficients, which range from .86 to .96. These values indicate that the translated instruments are reliable measures of the constructs under investigation.

Additionally, the skewness range provides information about the distribution of responses for each instrument. Skewness refers to the degree of asymmetry in the distribution of scores. The acceptable range of skewness depends on the specific context and sample size. However, if the skewness values fall within a reasonable range (e.g., between -2 and $+2$), it suggests that the distribution of responses is relatively symmetrical.

Overall, the high reliability coefficients suggest that the translated research instruments yield consistent and dependable results. This strengthens the confidence in using these instruments to assess the variables of interest in the study. The acceptable skewness range further supports

the suitability of the instruments for data analysis and interpretation.

Five subscales (emotional support, esteem support, network support, informational support, and tangible support) were each scored by determining the mean score for items loading on each factor. This method was selected because it preserves comparability with the original scale development protocols (Xu & Burleson, 2001) and facilitates simple interpretation across samples and studies. Based on mean scores, as opposed to raw totals, the differences in the number of items across subscales will not artificially inflate or deflate the size of the scores.

In addition to the five first-order factors, overall spousal support as a higher-order construct was assessed. Theoretical and empirical rationale for this second-order factor lies in the fact that although emotional, esteem, network, informational, and tangible support are delineated dimensions, they are interrelated expressions of a larger underlying construct: the general perception of support within the marriage relationship (Cutrona & Russell, 1990; House, 1981). For instance, the spouses who show high levels of emotional support are also frequently seen to be more available in terms of tangible or informational support, indicating the interrelatedness of these areas.

Ascertaining the higher-order factor structure permitted us to test if the subscales operated independently but meaningfully added to a broad measure of spousal support. This hierarchical modeling approach aligns with best practice in psychometric validation, whereby subscale-specific variance is maintained but united under a broader construct (Brown, 2015; Kline, 2016). The existence of a higher-order factor gives very clear evidence that the Urdu version of the Spousal Social Support Questionnaire not only measures the subtleties of various types of support but also produces a reliable and valid composite measure of total spousal support in the cultural context of Pakistan.

Two models (see Table 3) were examined in the confirmatory factor analysis. Model 1 was the default five-factor structure of the Spousal Social Support Questionnaire with no modifications. The fit indices for Model 1, however, failed to achieve the suggested cut-off values for a good fit, which meant that the hypothesized model needed to be fine-tuned. To do this, modification indices (MIs) were considered because they offer statistical recommendations on parameters that, if estimated freely, would have a large impact on improving model fit (Byrne, 2016; Kline, 2016).

Table 1 – Inter-correlation of the scale and its subscales in their original, forward-translated, and backward-translated forms (N = 365)

| No. Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | SSORG | OEMO | OEST | ONET | OINF | OTAN | USS | UEMO | UEST | UNET | UINF | UTAN | SSFWD | FEMO | FEST | FNET | FINF | FTAN |
| 1 SSORG | – | .91** | .92** | .90** | .92** | .83** | .82** | .88** | .83** | .93** | .80** | .91** | .95** | .83** | .81** | .90** | .92** | .83* |
| 2 OEMO | | – | .88** | .72** | .81** | .66* | .77** | .85** | .61** | .74 | .71* | .70 | .70* | .88** | .95** | .72** | .81** | .69* |
| 3 OEST | | | – | .79 | .82** | .65* | .76 | .95** | .66 | .82** | .70** | .61 | .87** | .76* | .83** | .79* | .82* | .52 |
| 4 ONET | | | | – | .81** | .71* | .92** | .83 | .74* | .90** | .72* | .91* | .91** | .51 | .70 | .90** | .81** | .72* |
| 5 OINF | | | | | – | .71** | .65 | .71* | .70* | .66 | .63 | .70 | .64 | .62* | .61 | .81** | .90* | .66 |
| 6 OTAN | | | | | | – | .62** | .85** | .91** | .83** | .71** | .74** | .51* | .61 | .73** | .71** | .71** | .90** |
| 7 USS | | | | | | | – | .89** | .90 | .89* | .91* | .79** | .84** | .87 | .89 | .71* | .71 | .78** |
| 8 UEMO | | | | | | | | – | .86** | .69** | .76 | .59* | .64** | .92** | .77 | .93** | .81** | .94** |
| 9 UEST | | | | | | | | | – | .76* | .78** | .56 | .57** | .85** | .86 | .74 | .46 | .70* |
| 10 UNET | | | | | | | | | | – | .80** | .66* | .60** | .60 | .56 | .60 | .62 | .61** |
| 11 UINF | | | | | | | | | | | – | .65 | .79 | .74* | .63 | .52 | .61* | .75** |
| 12 UTAN | | | | | | | | | | | | – | .85** | .83** | .71 | .81** | .63 | .64** |
| 13 SSFWD | | | | | | | | | | | | | – | .88** | .90** | .61 | .74 | .79** |
| 14 FEMO | | | | | | | | | | | | | | – | .86 | .90** | .92** | .57** |
| 15 FEST | | | | | | | | | | | | | | | – | .80** | .81** | .55** |
| 16 FNET | | | | | | | | | | | | | | | | – | .81** | .62* |
| 17 FINF | | | | | | | | | | | | | | | | | – | .67 |
| 18 FTAN | | | | | | | | | | | | | | | | | | – |

Legend. SSORG = Spousal Support Questionnaire (Original); OEMO = Emotional support (Original); OEST = Esteem support (Original); ONET = Network support (Original); OINF = Informational support (Original); OTAN = Tangible support (Original); USS = Spousal Social Support Questionnaire (Urdu version); UEMO = Emotional support (Urdu); UEST = Esteem support (Urdu); UNET = Network support (Urdu); UINF = Informational support (Urdu); UTAN = Tangible support (Urdu); SSFWD = Spousal Social Support Questionnaire (forward translation); FEMO = Emotional support (forward translation); FEST = Esteem support (forward translation); FNET = Network support (forward translation); FINF = Informational support (forward translation); FTAN = Tangible support (forward translation).

Note. **Correlation is significant at the .01 level (2-tailed). *Correlation is significant at the .05 level (2-tailed). Correlations represent within-subject associations between different language versions of the same scale. The same participants (N = 365) completed the original English version, the forward-translated Urdu version, and the backward-translated English version of the Spousal Social Support Questionnaire.

Table 2 – Alpha coefficients of the scale and subscales in the translated Urdu version (N = 365)

| Scale | k | M (SD) | α | Range | | Skewness | Kurtosis |
|---|----|---------------|----------|-----------|--------|----------|----------|
| | | | | Potential | Actual | | |
| Spousal Social Support Questionnaire (Urdu) | 35 | 106.55(33.94) | .96 | 35-175 | 39-173 | -.16 | -.70 |
| Emotion support (Urdu) | 7 | 23.15(8.02) | .90 | 7-35 | 7-35 | -.40 | -.93 |
| Esteem support (Urdu) | 7 | 21.55(7.33) | .86 | 7-35 | 7-35 | -.37 | -.57 |
| Network support (Urdu) | 7 | 18.59(7.66) | .88 | 7-35 | 7-35 | .24 | -.97 |
| Informational support (Urdu) | 7 | 22.24(7.72) | .89 | 7-35 | 8-35 | -.10 | -.93 |
| Tangible support (Urdu) | 7 | 21.01(7.90) | .86 | 7-35 | 7-35 | .28 | -.92 |

Legenda. k = No of items; M (SD) = Mean (Standard Deviation); α = Cronbach's alpha.

Table 3 – Fit indices of Spousal Social Support Questionnaire and its subscales (N = 365)

| Scale | χ^2 | df | CMIN/df | IFI | NFI | CFI | RMSEA |
|---------|----------|-----|---------|-----|-----|-----|-------|
| Model 1 | 2052.49 | 527 | 1.90 | .68 | .51 | .67 | .15 |
| Model 2 | 173.19 | 584 | 8.24 | .94 | .87 | .94 | .06 |

Legenda. df = degree of freedom; IFI = Incremental Fit Index; NFI = Normed Fit Index; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation.

Note. Model 1: default model of CFA; Model 2: model after adding covariances.

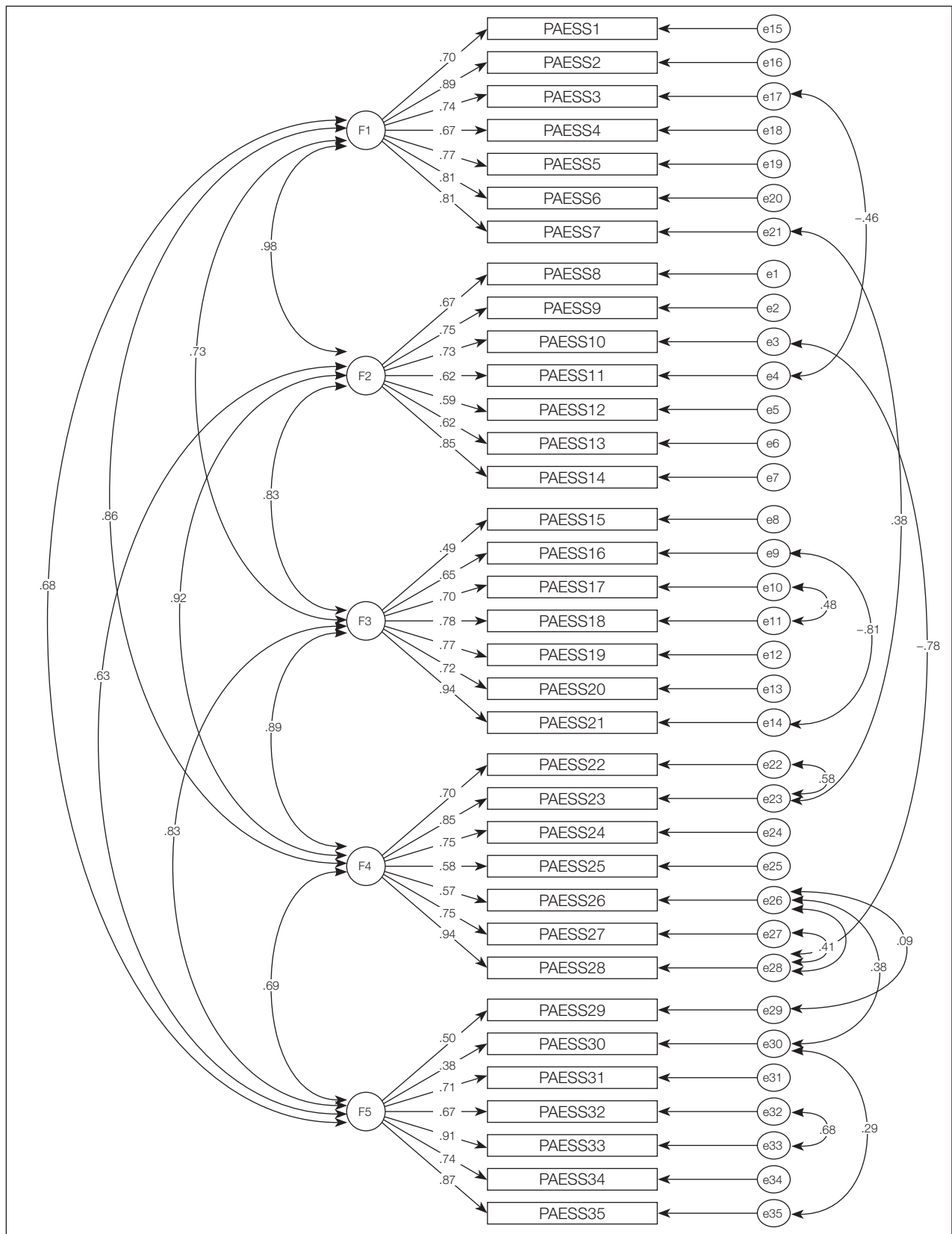
According to both the MI values and theoretical rationale, some error covariance terms were added in Model 2. Adding these additions significantly enhanced the fit indices ($\chi^2/df = 2.1$, CFI = .94, RMSEA = .05), and it showed that the revised model yielded a better fit to the data while remaining theoretically equivalent to the initial structure. This is in line with best practice in CFA where modification indices are cautiously employed, but only if they are commensurate with substantive theory (Brown, 2015).

These findings provide support for the appropriateness of the Urdu translated versions of the scale and its subscales

in measuring spousal social support in the specific cultural context of the study.

Five theoretically defined factors make up the Spousal Social Support Questionnaire. Emotional support is represented by items 1-7, esteem support by items 8-10, network support by items 15-21, informational support by items 22-28, and tangible support by items 29-35. The confirmatory factor analysis of the Urdu version kept these item-factor groupings, which were predetermined based on the original scale development (Xu & Burleson, 2001) (see Figure 1).

Figure 1 – Five factor structure solution of the translated Spousal Social Support Questionnaire



Legenda. F1 = Emotional support; F2 = Esteem support; F3 = Network support; F4 = Informational support; F5 = Tangible support.

The standardised factor loadings are shown in Table 4, and the conclusions are consistent with the findings of the reliability study. Additionally, factor loadings revealed that all of the questions on the Spousal Social Support Questionnaire that were translated into Urdu had acceptable factor loadings, which are above .3, and were internally consistent.

In the present study, the convergent validity of the Spousal Social Support Questionnaire (Urdu version) was assessed through correlation analysis. To validate the translated scale, the Satisfaction with Life Scale (Urdu version) was utilized. The Satisfaction with Life Scale was originally developed by Diener and colleagues (Diener, Emmons, Larsen & Griffin, 1985) and subsequently translated into Urdu by Barki and colleagues (Barki, Choudhry & Munawar, 2020). This scale measures individuals' satisfaction with their life as a whole. The assumption in the present study was that if individuals receive appropriate levels of spousal support, they will experience higher satisfaction with their life. To examine this assumption, correlation analysis was conducted between the Spousal Social Support Questionnaire, its subscales, and the Satisfaction with Life Scale. The results, presented in Table 5, indicate adequate correlations among these measures, providing evidence of high convergent validity for the translated version of the scale. The significant correlations between the Spousal Social Support Questionnaire and the Satisfaction with Life Scale support the notion that receiving spousal support is positively associated with overall life satisfaction. This finding strengthens the argument for the convergent validity of the translated scale, suggesting that it effectively captures the construct of spousal support in relation to life satisfaction.

DISCUSSION

This study's goal was to adapt and validate the Spousal Social Support Questionnaire for use in Pakistan (Xu & Burleson, 2001). Given that Urdu is the preferred language for communication in Pakistan and that English is not the country's official language, it was crucial to translate the questionnaire into Urdu to ensure that participants would find it simple and accurate to respond.

The Spousal Social Support Questionnaire has been translated into various languages, including Chinese,

Turkish, Hindi, and others, in order to examine levels of spousal support across different cultural contexts. In this study, the questionnaire was translated into Urdu to cater to the Pakistani population and to facilitate future research by providing a more accessible instrument for participants. Correlation and reliability analyses were performed to determine the translated questionnaire's psychometric qualities. The findings revealed a substantial positive correlation across the three language versions of the scale, proving consistency and coherence. Furthermore, the psychometric properties, including reliability, were found to be sound, indicating the questionnaire's consistency and stability in measuring the intended construct.

Confirmatory factor analysis (CFA) was carried out on a fresh sample to further validate the factor structure of the Urdu translated version. The explicit correspondence between items and their respective factors further supports the construct validity of the Urdu version and confirms the stability of the original five-factor structure across languages. The factor loadings were determined to be acceptable, and the models shown adequate fit on a variety of model fit indices. These results demonstrate the suitability and reliability of the translated instrument in the particular cultural setting of Pakistan. The reliability analysis results coincide with those of the confirmatory factor analysis, supporting the strong psychometric potential of the translated instrument.

In present research authors employed the method of convergent validity to establish the construct validity of the questionnaire. They examined the correlation coefficients between the Urdu version of the Spousal Social Support Questionnaire and the Satisfaction with Life Scale (Urdu). The results of the analysis revealed high correlation coefficients between the two scales, indicating strong construct validity. This implies that the Urdu version of the Spousal Social Support Questionnaire effectively captures the intended construct and aligns well with the concept of satisfaction with life, as measured by the Satisfaction with Life Scale (Urdu). The findings suggest that the forward-translated (Urdu) items of the questionnaire maintain the same meaning as the original version, fulfilling the primary objective of translation. The high construct validity indicates that the translated questionnaire accurately measures the construct it intends to assess, thus validating the adequacy of the translation process. By establishing convergent validity, this study confirms that the Urdu version of the Spousal

Table 4 – Standardized factor loadings for the five-factor structure of the Spousal Social Support Questionnaire (N = 365)

| Factor name | Item No. | Factor loadings (N = 365) |
|-----------------------|----------|--------------------------------------|
| | | Spousal Social Support Questionnaire |
| Emotional support | Item 1 | .70 |
| | Item 2 | .80 |
| | Item 3 | .74 |
| | Item 4 | .67 |
| | Item 5 | .77 |
| | Item 6 | .81 |
| | Item 7 | .81 |
| Esteem support | Item 8 | .67 |
| | Item 9 | .75 |
| | Item 10 | .73 |
| | Item 11 | .62 |
| | Item 12 | .59 |
| | Item 13 | .62 |
| | Item 14 | .85 |
| Network support | Item 15 | .49 |
| | Item 16 | .65 |
| | Item 17 | .70 |
| | Item 18 | .78 |
| | Item 19 | .77 |
| | Item 20 | .72 |
| | Item 21 | .94 |
| Informational support | Item 22 | .70 |
| | Item 23 | .86 |
| | Item 24 | .78 |
| | Item 25 | .58 |
| | Item 26 | .57 |
| | Item 27 | .75 |
| | Item 28 | .94 |
| Tangible support | Item 29 | .50 |
| | Item 30 | .38 |
| | Item 31 | .71 |
| | Item 32 | .67 |
| | Item 33 | .91 |
| | Item 34 | .74 |
| | Item 35 | .87 |
| | <i>K</i> | 35 |

Note. *K* = Number of items of the scales. Items 1-7 correspond to emotional support, items 8-10 to esteem support, items 15-21 to network support, items 22-28 to informational support, and items 29-35 to tangible support. All items loaded on their theoretically specified factors.

$p < .05$

Table 5 – Convergent validity of Spousal Social Support Questionnaire and its subscales (Urdu version)

| | USS | UEMO | UEST | UNET | UINF | UTAN | SWLS |
|------|-----|-------|-------|-------|-------|-------|-------|
| USS | – | .89** | .90** | .89** | .91** | .79** | .63** |
| UEMO | | – | .86** | .69** | .76** | .59** | .61** |
| UEST | | | – | .76** | .78** | .56** | .66** |
| UNET | | | | – | .80** | .66** | .54** |
| UINF | | | | | – | .65** | .52** |
| UTAN | | | | | | – | .44** |
| SWLS | | | | | | | – |

Legenda. USS = Spousal Social Support Questionnaire (Urdu version); UEMO = Emotional support (Urdu); UEST = Esteem support (Urdu); UNET = Network support (Urdu); UINF = Informational support (Urdu); UTAN = Tangible support (Urdu); SSFWD = Spousal Social Support Questionnaire (forward translation); SWLS = Satisfaction with Life Scale.

Note. **Correlation is significant at the .01 level (2-tailed).

Social Support Questionnaire captures similar aspects of spousal support as the original version and is related to overall satisfaction with life. These findings contribute to the existing research on spousal support and its impact on individuals' well-being, specifically within the cultural context of Pakistan.

Limitation

This study's generalizability is constrained by the fact that only Islamabad and the Rawalpindi District were used as the sample collection areas. It is essential to gather samples from all of Pakistan's provinces in order to broaden the applicability of the study's findings and create standards for the translated Urdu versions. Furthermore, because unrelated scales weren't used, it was unable to establish the discriminant validity of the scale through correlations.

Implications

The study has successfully introduced an Urdu-translated version of the scale, which is expected to encourage future research in the field of social psychology and facilitate comprehensive data collection from diverse segments of the population. This scale can be effectively employed in both clinical and non-clinical settings to evaluate the extent of support married individuals receive from their spouses.

CONCLUSION

The study's findings support the validity and reliability of using the research instrument's Urdu translation to measure spousal social support in Pakistan. The findings also demonstrate that this measure is not culturally exclusive and may be valid across all cultures.

Data availability statement: The data supporting the findings of this study are available upon request from the corresponding author. The data include survey responses used to generate the results and conclusions reported in this article. Access to the data will be granted upon reasonable request and in accordance with any applicable data protection and privacy regulations. **Conflict of interest:** The authors declare that they have no conflict of interest that could have influenced the outcomes or interpretation of this study. **Informed consent:** All participants involved in this study provided informed consent prior to their participation. The nature and purpose of the study, as well as the potential risks and benefits, were clearly explained to

the participants. They were also informed of their rights to withdraw from the study at any time without penalty or loss of benefits. Confidentiality and anonymity of the participants were strictly maintained throughout the research process, and all data collected were used solely for the purpose of this study. **Ethical approval:** This study was conducted in accordance with the ethical principles outlined in American Psychological Association's (APA) Ethical Considerations. The research protocol and informed consent procedures were reviewed and approved by the ethics committee and institutional board of National Institute of Psychology, Quaid I Azam University, Islamabad, Pakistan.

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