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The effects of individual and team resilience on psychological health and team performance: a multi-level approach

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Abstract
The challenges that individuals and teams face in complex and unstable environments can negatively affect individuals' psychological health and team performance. In such contexts, resilience becomes an essential resource for both teams and individuals. It is therefore important to develop a comprehensive approach of resilience at work. The aim of this study is to examine the concurrent and differential effects of individual and team resilience, at both the within-group and between-group levels, on team performance and psychological health (i.e., operationalised as stress and subjective well-being). A cross-sectional survey of 530 employees nested within 68 teams was conducted. Multilevel Structural Equation Modelling analyses indicated that both individual resilience and team resilience at the within-group level were related to psychological health and team performance. Individual resilience was more strongly related to psychological health than to team performance, while the opposite was the case for team resilience. At the between-group level, individual resilience was related to psychological health, while team resilience was related to team performance. These findings suggest that resilience comprises of several components that are equally important but in different ways. Having resilient individuals in a team matters more for psychological health and ensuring that teams sustain a resilient group dynamic is more important for team performance.

Keywords Individual resilience · Team resilience · Team performance · Psychological health

Resilience is an essential resource for individuals and organizations to build adaptability, support performance and well-being, and prevent the negative effects of change and uncertainty in the workforce (Bardoel et al., 2014; Shin et al., 2012; Vanhove et al., 2016). In the aftermath of the COVID-19 pandemic, which brought to the fore the importance of resilience for mental health around the world (World Health Organization, 2020), resilience becomes a powerful resource not just for individuals but also for teams and the organisation as a whole. Research indicates that resilience has been linked to a diverse range of health-related outcomes (such as lower stress and higher emotional well-being, Fredrickson & Joiner, 2002; and reduced strain, Crane & Searle, 2016), as well as improved work outcomes such as performance (Luthans et al., 2007). Resilience is not solely linked to within-person factors or characteristics, but rather, it is partially a function of contextual factors. Yet, we know relatively little about how different aspects of resilience concurrently impact on outcomes that matter to both individuals and their teams.

Resilience is sourced both within the person and also within teams and is related to both individual as well as team outcomes. At the individual level, recent reviews by Hartwig et al. (2020) and Hartmann et al. (2019) indicate that most definitions of resilience include the notion of positive adaptation and adversity. Positive adaptation (Masten, 2001) occurs when individuals recover from their initial state of well-being or performance (Britt et al., 2016). Adversity can come from isolated but high-intensity circumstances (e.g., a crisis situation) or from low-intensity

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but frequent or chronic circumstances (e.g., workplace stress; Fisher et al., 2019). At the work team or organisational level, resilience has been characterized as a state-like positive organizational behaviour (Luthans et al., 2007) amenable to change by human resource-based interventions such as training, coaching, work-life balance, diversity, or management (Bardoel et al., 2014). Drawing on this perspective and in line with McEwen and Boyd's (2018) definition, we conceptualize individual resilience as a capacity to manage everyday pressures, remain healthy, recover, and bounce back from setbacks and highlight that this capacity can be developed or trained within individuals and work teams.

Research focus has thus shifted from individual to team resilience (Alliger et al., 2015; Sharma & Sharma, 2016), reflecting the team unit as a crucial determinant for organizational performance and sustainability (Lacerenza et al., 2018). Similarly, to individual resilience, team resilience has been defined as a capacity to recover from setbacks, conflicts, or other threats to well-being that a team may experience (West et al., 2009), akin to collective efficacy (Goddard et al., 2004). In other words, the "ability of the teams/groups to bounce back and sustain in the facade of adverse conditions" (Sharma & Sharma, 2016, p. 37). It has been argued that the capacity for effective adaptation in resilient teams might be through collective interactions, rather than through isolated individuals (Bowers et al., 2017). As such, team resilience is the outcrop of interactions among team members to maintain their collective performance (Bowers et al., 2017; Gucciardi et al., 2018; Stoverink et al., 2020).

However, although team resilience can have both well-being and performance-related outcomes, research interest on team resilience has tended to focus on its relationship with team performance (McEwen & Boyd, 2018; Meneghel et al., 2016a, b). To our knowledge, only one study has focused on health-related outcomes but only found significant effects between team resilience and work engagement but not emotional exhaustion (McEwen & Boyd, 2018), rendering the examination of other health-related variables important. Importantly, McEwen and Boyd (2018) note, is that it is essential to go beyond an individual-focused approach by taking a multilevel perspective. In the case of resilience, this is especially important since "work is increasingly structured in and around teams" (p. 259). Having highly resilient individuals in a team may be an advantage as resilient individuals deal well with pressure and may share their skills with others to benefit the team (Flint-Taylor & Cooper, 2017). Individual and team resilience are inseparable: by being exposed to and responding to shared events as individuals within a team, team members may emulate each other's behaviours and cognitions through vicarious learning and develop collective resilience (Meese et al., 2021). Thus, a comprehensive understanding requires a model that includes both individual (i.e., within-group) and team (i.e., between-group) effects of team resilience. Thus, based on previous research and as we explore below, we opine that aggregated individual resilience as a component of team resilience is worth exploring in a cross-level approach in order to develop a more comprehensive understanding of the phenomenon. Such an investigation will shed light on health-related outcomes whereby having more resilient individuals in a team might have a more positive influence on health and well-being. In addition, it is important to extend this line of research by investigating the multilevel relationship between team resilience and psychological health, in addition to team performance.

Therefore, the overall aim of our study is to explore the concurrent and differential effects of individual and team resilience on both psychological heath (i.e., stress and subjective well-being) and team performance and at both individual level (i.e., within-group effects) and group level (i.e., between-group effects). Although there is a tremendous amount of research on resilience over the last decades, it is still unclear how different types of resilience exert their effects on interrelated outcomes and at multiple levels of analysis. We hope that this approach mirrors the complexity of working life in organisations. We undertook our study during the COVID-19 pandemic as this context in itself was a form of adversity leading to potential stress placed on individuals and teams, having in particular to adapt to new work patterns working remotely from home instead of their office (O'Connor et al., 2020).

We consider resilience as a multilevel phenomenon and show that it can exist at different levels, with differential strengths effects. Individuals and teams operate as part of an interdependent system, such that phenomena at one level can influence phenomena at the other level (Kozlowski & Klein, 2000). In the present study we examine four concurrent resilience effects as manifesting at the individual and group levels on three outcomes.

The contribution of the present study is twofold. First, we examine four concurrent and differential effects of resilience (viz. individual and team resilience at both the within-group and between-group level) when the majority of previous research has focused on one level only. Second, it helps to clarify some ambiguity in the literature regarding the outcomes of individual and team resilience for employee health and performance. Specifically, Hartwig et al.'s (2020) model suggests that resilience at the team level is positively associated with employees' health and well-being and performance, whereas Hartmann et al.'s (2019) model views team performance as a function of team resilience, and employee mental and physical health as contingent upon their individual resilience.

Relationship between Individual and Team Resilience

Team resilience in previous research has been conceptualized as related but different to individual resilience, overlooking the combined and unique value that each may offer in the effective management of workplace adversity (Hartwig et al., 2020; Stoverink et al., 2018). Both constructs are distinct because collective responses to adversity require effective communication, collaboration, and coordination among team members, a characteristic that is not present in individual level coping with adversity (Hartwig et al., 2020). As noted by Stoverink et al. (2020), "the processes through which resources emerge and are then invested [in teams] unfold very differently compared to [those in] resilient individuals" (p. 397). Correspondingly, the potential responses are also different (e.g., individual coping strategies at individual-level vs. coordination process for teams) – specifically, the capacity used at each level facilitates the corresponding response strategies and might lead to positive adaptation outcomes at that level (Hartwig et al., 2020). Such differentiated mechanisms raise an expectation that resilience will occur at different levels with differential strengths effects (see Hypotheses 6a and 6b).

Although they are distinct constructs, individual and team resilience are also highly interrelated (Hartwig et al., 2020). Team behaviour can foster or detract from an individual's resilience and similarly the resilience of a team member can impact the collective actions taken by a team to build resilience (McEwen & Boyd, 2018). For example, a disengaged team might go against the individual resilience of its members. Conversely, an individual's action to provide or withhold necessary information from their team members can augment or weaken the team's resilience. We expect this correlation to occur at both the within-group level as well as the between-group level of analysis as individuals are nested within teams. Therefore, our first hypothesis is:

H1: Individual resilience is positively associated with team resilience, at both the within-group level as well as the between-group level.

The effect of individual resilience (within-group) on psychological health and team performance

If positive adaptation emerges from the capacity of resilience, it can have a direct effect on psychological or mental health (Davydov et al., 2010) and a more generalized effect on positive well-being (viz. positive emotions, life, or job-related satisfaction; Diener, 1994; Diener et al., 1999). Existing evidence indicates that resilient individuals experience more positive emotions even amidst stressful situations, compared with those who are less resilient, enabling them to adapt to stress and effectively recover from adversity (Ong et al., 2006). Drawing on existing published resilience scales (Friborg et al., 2003; Winwood & McEwen, 2013), we operationalize individual resilience as being optimistic, organised, asking for support, and maintaining healthy interpersonal relations in the face of adversity. The ability to attribute a positive meaning to daily problems and adopt a problem-focused coping style has been found to reinforce positive emotions (such as, life or job satisfaction; Liu et al., 2014) and attenuate negative affect (such as stress; Crane & Searle, 2016) in adverse situations (Folkman & Moskowitz, 2000). Therefore, we hypothesise that individual resilience at within-group level will be positively associated with subjective wellbeing and negatively associated with perceived stress.

H2a: Individual resilience at the within-group level is positively related to subjective wellbeing.

H2b: Individual resilience at the within-group level is negatively related to perceived stress.

In addition, McEwen and Boyd (2018) found a positive relationship between individual resilience (within-group) and perceived team performance ($\beta = 0.14$, $p < .05$) indicating that individuals who are confident in their own capacity to cope with adversity are more likely to evaluate their team's performance favourably than those who are less resilient. As this relationship, to the best of our knowledge, has been explored in only one study in empirical research so far (McEwen & Boyd, 2018), we aim to replicate it in the present study. Therefore, we hypothesise that individual resilience at the within-group level is positively associated with perceived team performance.

H2c: Individual resilience at the within-group level is positively related to team performance.

The effect of perceived team resilience (within-group) on psychological health and team performance

A resilient team is one that can demonstrate the ability to recover from or adapt to an adverse situation (Stoverink al., 2018). If team members perceive that they belong to a resilient team then, they might be less likely to feel stressed and be more likely to be confident in their ability to overcome adversity because their own resilience might be enhanced via engagement with a resourceful and resilient team

(Meneghel et al., 2016b). This mechanism is in line with the social learning theory (Bandura, 1977); team members can strengthen each-other's resilience by learning from each-other's resilient thoughts, behaviours, and actions (Hartwig et al., 2020) thereby, increasing the overall perceived resilience of a team. In the present study, we operationalized team resilience in terms of team behaviours such as perseverance, cooperation, and mutual social support, which serve as capabilities to maintain the effective functioning of the team in times of adversity (Hartwig et al., 2020). These capabilities can assist the mitigation of perceived threats thereby, allowing team members to sustain their own psychological health (Bakker & Bal, 2010; Bakker et al., 2005; Beehr et al., 2003; Cohen, 2004; Kossek et al., 2011). Therefore, we expect perceived team resilience (within-group) to be positively associated with psychological health.

H3a: Perceived team resilience at the within-group level is positively related to subjective wellbeing.
H3b: Perceived team resilience at the within-group level is negatively related to perceived stress.

In addition, as individuals work interdependently in teams and aim to meet a set of common objectives (Kozlowski & Ilgen, 2006), it is important that team performance is evaluated as an outcrop of team functioning (Gucciardi et al., 2018). McEwen and Boyd (2018) found that the more team members perceived their team to be resilient i.e., engaged in collective interactions that maintained effective team functioning in times of adversity, the more they were likely to evaluate their team's performance positively. This suggests that team members who are confident in their team's ability to cope effectively with challenges and bounce back from adverse events are more likely to evaluate their team as well-performing. Thus, based on the above, we hypothesise the following:

H3c: Perceived team resilience at the within-group level is positively related to team performance.

The effect of team resilience (between-group) on psychological health and team performance

Thus far we have developed hypotheses framed from a within-group (i.e., individual) perspective. We now turn to an examination of the between-group (i.e., team) perspective, specifically looking at how the experience of team resilience within a team is associated with psychological health and performance. We do this by using aggregated scores of team resilience, as the average level of team resilience within the team which we label "team resilience" (i.e., the between-group [team] effect of team resilience).

First, we can expect that team resilience will have a positive top-down effect on the psychological health of individual team members. This is plausible via social identity mechanisms. As social identity theory (Tajfel & Turner, 1986) suggests, individuals identify with each other in their group and internalize their norms and beliefs leading to similarities in behaviours. When team members share a strong team identity, they may be more eager to provide support to each other, which can in turn, reduce negative affect (Frish et al., 2014). Thus, team identity allows members to develop a sense of collective resilience within the team. This psychological mechanism suggests that individuals can find meaning in adverse situations that they experience (Weick, 2015). Finding meaning and greater purpose in life can motivate individuals to reframe stressful situations to be able to cope better, thereby facilitating recovery from stress (Schaefer et al., 2013).

In addition, positive emotions have the potential to enhance individual resilience (Algoe & Fredrickson, 2011). This mechanism is also seen in teams as emotional reactions to events are shared among team members who closely collaborate thus, experiencing a sense of 'collective emotion' (Rhee, 2007). Empirical evidence suggests that collective positive emotions in work teams are positively related to team resilience (Meneghel et al., 2016a). A reciprocal link is also plausible, whereby team resilience can foster collective positive emotions, which in-turn can trigger positive spirals leading to greater well-being (Fredrickson & Joiner, 2002). Therefore, resilient teams, in which team members experience good relationships and mutual support, may report higher subjective well-being and reduced stress.

H4a: Team resilience at the between-group level is positively related to subjective wellbeing.
H4b: Team resilience at the between-group level is negatively related to perceived stress.

Furthermore, research has consistently supported a strong and positive link between team resilience and team performance (e.g., McEwen & Boyd, 2018; Meneghel et al., 2016b; Salanova et al., 2012). Team resilience can help team members maintain or ameliorate their performance as resilient teams generally demonstrate increased team functioning and enhanced resilience for future challenges (Carmeli et al., 2013). Highly resilient teams are more likely to be creative, adaptive to change, and persistent in dealing with adversity (Luthans et al., 2007) and therefore, more able to sustain and potentially increase their performance under adversity. Thus, we hypothesise the following:

H4c: Team resilience at the between-group level is positively related to team performance.

The Effect of aggregated individual resilience (between-group) on Psychological Health and Team Performance

As previously discussed, a team consisting of highly resilient individuals does not guarantee team resilience to manifest (Alliger et al., 2015; Bowers et al., 2017) unless individual team members do not adequately support each other to attain collective goals. However, taking a single-level and individual-focused perspective risks overlooking important interrelationships which might exist at different levels of analysis (Croon & Veldhoven, 2007). Thus, we argue that team resilience can emerge and be sustained by resilient individual members who can act as role models and influence the behaviour of other team members through vicarious learning. Also, as individual resilient behaviour has been found to be negatively associated with stress (Meese et al., 2021), we expect that the average level of individual resilience within a team i.e., "aggregated individual resilience" will also be negatively associated with stress and positively associated with the aggregated members' well-being. Thus, we hypothesise the following:

H5a: Aggregated individual resilience at the between-group level is positively related to aggregated subjective wellbeing.

H5b: Aggregated individual resilience at the between-group level is negatively related to aggregated perceived stress.

Although resilient individuals tend to cope well with adverse events and experience fewer negative performance outcomes (Hartwig et al., 2020), the combined strength of individual team members' resilience may be particularly important for supporting a team's performance, especially when team members demonstrate a strong sense of collective identity (Steffens et al., 2017). This may enable them to cooperate and engage in the necessary team communication and related collective interaction during adverse events. Therefore, we hypothesise the following:

H5c: Aggregated individual resilience at the between-group level is positively related to aggregated team performance.

Variable degree of effect of individual and team resilience at the within-group level and the between-group level

We expect individual and team resilience at the within-group level (i.e., individual) and the between-group level (i.e., team) to manifest concurrently on outcomes, but also that the degree or strength of their effects will vary. There are conflicting expectations in the literature. On the one hand, Hartwig et al.'s (2020) conceptual model suggests that resilience at the team level is positively associated with both employees' health and well-being and performance. On the other hand, Hartmann et al.'s (2019) review propose that effects are differentiated by levels of specificity: team performance as a function of team resilience, and employee mental and physical health as contingent on individual resilience. An empirical study (McEwen & Boyd, 2018) concur with the latter, indicating that team resilience is positively associated with work engagement but unrelated to emotional exhaustion. McEwen and Boyd (2018) also found that team resilience had a stronger impact than individual resilience on team performance, attributing this to group membership. To date, no other research has examined differential strengths but, we expect that performance-related outcomes will be more strongly related to team resilience than to psychological health outcomes because a team's purpose is to produce agreed outputs by organizing individual strengths into a collective force. Furthermore, due to the pressure placed on teamwork during the COVID-19 pandemic, it is possible that a team's needs became more prominent or more critical due to the intensification of work and the urgency to adjust to remote work (Ipsen et al., 2020a, b). Therefore, it is expected that team resilience will be more strongly related to team performance than to psychological health outcomes, at this specific time. Similarly, a stronger relationship is expected between individual resilience and psychological health outcomes than between individual resilience and team performance. This is because psychological health is an inseparable part of positive adaptation that the capacity of resilience and recovery brings (Britt et al., 2016; Davydov et al., 2010). It is important to clarify these relationships and empirically examine the propositions of available theoretical models (Hartwig et al., 2020; Hartmann et al., 2019). Therefore, our final group level hypothesis is as follows:

H6a: Team resilience will be more strongly related to team performance than to psychological health outcomes, at both the within-groups level as well as the between-group level.

H6b: Individual resilience will be more strongly related to psychological health than to team performance

outcomes, at both the within-group level as well as the between-group level.

Method

Participants and procedure

We employed a cross-sectional design using surveys to collect data. Participants were 530 employees nested within 68 teams from two organizations in the insurance and pharmaceutical sectors in France. Team size ranged from 3 to 26, with an average of 11.31 individuals ($SD = 6.76$). Of the participants, 64% were female and 75% held professional non-managerial roles. Managers accounted for 25% of the sample. Of the respondents, 9.4% were younger than 30 years of age, 27.4% were between 30 and 39 years of age, 30.4% were between 40 and 49 years of age, and 32.7% were 50 years old or older. Most participants were employed in permanent positions (94.5%), and most were in a full-time job (97.7%).

Data collection took place during the first wave of COVID-19 pandemic, between September and October 2020. Human resource managers in each organization were involved in the study by helping to recruit participants via internal communications and online presentation of the study to managers in order to encourage them and their teams to participate. Employees, who were working from home at the time, were invited to complete an online questionnaire during work hours within a three-week window. Participants were fully informed of the context of the study, that completion of the online questionnaire was voluntary, and that only aggregated data would be reported. They were assured of the confidentiality of their data in line with the General Data Protection Regulation 2016/679 and the National data protection authority in France.

Measures

Individual resilience

A scale comprised of eight items was developed to capture both individual self-beliefs and resilient behaviours in the work context. Items were adapted from Friborg et al. (2003) and Winwood and McEwen (2013). Respondents rated the extent to which they were able to cope and bounce back from difficulties, to adjust positively to difficulties, and maintain a good social environment through their social competences, on a 6-point Likert-type scale (from 1 = strongly disagree to 6 = strongly agree). Example items include: "I am confident in my ability to bounce back in the face of difficulties" and "In this period of crisis, I manage to maintain good relations with all those around me." The scale's internal consistency was $\alpha = 0.85$.

Team resilience

A scale of six items was derived from McEwen and Boyd's (2018) resilience at work framework to capture the perception of a team's capacity to bounce back from setbacks, adapt, and maintain a good level of cooperation among members. Items were rated on a 6-point Likert-type scale (from 1 = strongly disagree to 6 = strongly agree). Importantly, the referent for the questions was the team rather than the individual. For example: "Within our team, we work in a coordinated manner to achieve our common goal". Internal consistency was $\alpha = 0.93$.

Subjective well-being

We used the six-item scale of work-related subjective well-being from Mellor et al. (2017) which was based on the theory of hedonic well-being (Diener, 1999). It assesses positive emotions and one's evaluation of job satisfaction and is rated on 4-point Likert-type scale (ranging from 1 = strongly disagree to 4 = strongly agree). Example items include "My work gives me satisfaction." and "I have moments of pleasure in my work." among others. Internal consistency was $\alpha = 0.91$.

Perceived stress

The Perceived Stress Scale (PSS) originally developed by Cohen et al. (1983) and validated in French by Bellinghausen et al. (2009) was used to assess stress. The PSS assesses the degree to which an individual perceives life as unpredictable, uncontrollable, and overbearing during the previous month. The short version consists of 10 items rated on a 5-point Likert scale (from 1 = never to 5 = often). Example items include the following: "How often have you been upset because of something that happened unexpectedly?" and "How often have you been able to control irritations in your life?" among others. Cronbach's alpha for this scale was 0.87.

Team performance

We used Meneghel et al.'s (2016b) 6-item scale, which consisted of in-role team performance (3 items, e.g., "My team performs all the functions and tasks demanded by the job") and extra-role team performance (3 items, e.g., "We perform roles that are not formally required but which improve the organizational reputation"). This scale was treated as a

single dimension as confirmed by the CFA results discussed below. Responses were on a 6-point Likert-type scale (from 1 = strongly disagree to 6 = strongly agree). The scale demonstrated high internal consistency ($\alpha = 0.88$).

Data analysis

We used Multilevel Structural Equation Modelling (MSEM) to evaluate our hypotheses. Participant age and gender were controlled at Level 1 (i.e., the within-group level). Due to the disparity in the team size (i.e., the number of members in each team), which may affect multilevel analyses, we controlled for that at Level 2 (i.e., the between-group level). To run the MSEM model, we aggregated data for individual resilience and for team resilience in order to create the between-group Level 2 variables of aggregated individual resilience and team resilience. These were subsequently used to calculate the group mean centre for the within-group Level 1 variables for individual and team resilience. Although, in principle, lavaan (Rosseel, 2012) supports the latent mean-centering approach, we conducted the mean centering before the analysis. This resulted in the model having a smaller number of free parameters to be estimated which allowed the model to converge.

Evidence supporting the aggregation of these variables was obtained by calculating intraclass correlations (LeBreton & Senter, 2008) using one-way random effect models of each variable and interrater agreement index (r_{wg}; James et al., 1984). For aggregated individual resilience, the variance attributable to the between-group level was *ICC(1)* = 0.06 and the reliability of group means was *ICC(K)* = 0.35. Albeit small for the purpose of multilevel analysis, these values were considered appropriate to justify aggregation. ICC(1) was above the recommended minimum of 0.05 (LeBreton & Senter, 2008) and the reliability of group means was of lesser consideration given that we had high r_{wg} values. The average r_{wg}= 0.74 using a uniform distribution was satisfactory. The equivalent indices for shared team resilience and team performance were acceptable. For team resilience, *ICC(1)* = 0.13, *ICC(K)* = 0.54 and r_{wg}= 0.69 and for team performance *ICC(1)* = 0.13, *ICC(K)* = 0.53 and r_{wg}= 0.70, justifying aggregation in both cases. We conducted the Harman single factor test for common method variance (CMV). The results showed that only 35.27% can be attributed to the first principal component.

All statistical analyses were performed using R 4.1.0 (R Core Team, 2021) and the lavaan 6.9 package (Rosseel, 2012). Model fit was evaluated by assessing several indices (Kline, 2011; Parry, 2020), including the overall χ^2 ($p > .05$), χ^2/df ratio (< 4.0), root mean square error of approximation (*RMSEA* < 0.08), standardized root mean squared residual (*SRMR* < 0.08), Comparative Fit Index (*CFI* ≥ 0.90), and Tucker-Lewis Index (*TLI* ≥ 0.95).

The data and R-code for this study are publicly available here: https://osf.io/y3amq/?view_only=15c401969efa45599c1e3159a6619a7d.

Results

Confirmatory factor analyses

As summarized in Table 1, the one-factor model (M1) indicated poor fit χ^2 (77, $N = 530$) = 1220.531 $p < .05$, χ^2/df = 15.851, *RMSEA* = 0.167 (0.159, 0.176), *SRMR* = 0.14, *CFI* = 0.733, *TLI* = 0.685. The model fit was largely improved with the two-factor alternative model (M2.1; $\Delta\chi^2$ (1) = 861.76 $p < .0001$) providing support for a structure of two distinct and correlated factors, namely individual and team resilience. After reviewing modification indices, the items, "Within our team, we maintain good relations with one another even in difficult times" and "Within our team, we are available to one another to overcome our difficulties" were made to co-vary. Allowing for this residual correlation to be estimated within the model (M2.2), the model fit improved considerably $\Delta\chi^2$ (1) = 149.8 $p < .0001$. For team performance measure, a one-factor model indicated poor fit to data, $\chi 2$ (9, $N = 530$) = 247.315, $\chi 2/df$ = 27.479, *RMSEA* = 0.224 [0.200, 0.248], *SRMR* = 0.092, *CFI* = 0.885, *TLI* = 0.808. The item "We help colleagues when any of them has to be absent" was omitted due to low factor loading. It significantly improved the overall model fit ($\chi 2$ (5, $N = 530$) = 30.816, $\chi 2/df$ = 6.163, *RMSEA* = 0.099 [0.067, 0.133], *SRMR* = 0.028, *CFI* = 0.985, *TLI* = 0.970. Chi-square difference test was statistically significant ($\Delta\chi 2$ (4) = 216.5, $p < .0001$).

Table 1 Confirmatory factor analyses of team resilience and individual resilience

Model	χ^2	df	χ^2/df	CFI	TLI	SRMR	RMSEA	$\Delta\chi^2$	Δdf
M1	1220.53	77	15.85	0.73	0.69	0.14	0.17		
M2.1	358.77	76	4.72	0.93	0.92	0.05	0.08	861.76*	1
M2.2	208.99	75	2.79	0.97	0.96	0.05	0.06	149.8*	1

Note. $N = 530$; *$p < .0001$. χ^2 = Chi-square; *df* degree of freedom, *CFI* comparative fit index, *TLI* Tucker-Lewis index, *SRMR* standardized root mean square residual, *RMSEA* root mean square error of approximation, *M1* individual resilience + team resilience: first order model with a unique factor, *M2.1* individual resilience + team resilience: first order model with a two-factor, *M2.2* M2.1 + sustaining team members cooperation for team resilience

Descriptive statistics and correlational analysis

Table 2 presents the means, standard deviations, internal consistency coefficients, and bivariate correlations for the study variables. The table reports correlations at the within-group level as well as at the between-group level.

Hypothesis testing

Overall, the multilevel SEM model showed good fit to the data with $\chi^2(df = 6, N = 530) = 12.35$ ($p = .055$), $CFI = 0.995$, $TLI = 0.969$, $RMSEA = 0.045$ 90% CI (0.00, 0.08), $SRMR$ (within-group) = 0.038, and $SRMR$ (between-group) = 0.034. The model and standardized path coefficients are displayed in Fig. 1. Individual resilience and team resilience were significantly related to each other both at the within-group level ($\beta = 0.24$, $SE = 0.02$, $p < .001$) and between-group level ($\beta = 0.07$, $SE = 0.02$, $p < .001$), in support of H1. A coefficient plot for the estimates and confidence intervals for all model parameters created using the GGally package (Schloerke et al., 2024) is shown in Fig. 2.

At the within-group level (Level 1) of our multilevel SEM model and consistent with our hypotheses, individual resilience was related positively to subjective well-being ($\beta = 0.39$, $SE = 0.04$, $p < .001$) and negatively to stress ($\beta = -0.56$, $SE = 0.04$, $p < .001$), fully supporting H2a and H2b, respectively. On the other hand, perceived team resilience was significantly related to subjective well-being ($\beta = 0.20$, $SE = 0.03$, $p < .001$) but not to reduced stress ($\beta = 0.02$, $SE = 0.03$, $p = .497$), supporting H3a but not H3b, contrary to our expectation. Lastly, team performance was associated positively, albeit weakly, with individual resilience ($\beta = 0.11$, $SE = 0.04$, $p < .01$) and strongly with perceived team resilience ($\beta = 0.68$, $SE = 0.03$, $p < .001$), providing full support for H2c and H3c, respectively.

At the between-group level (Level 2), team resilience was unrelated to subjective well-being (H4a; $\beta = 0.115$, $SE = 0.07$, $p = .088$) or stress (H4b; $\beta = -0.13$, $SE = 0.07$, $p = .081$) but, as expected, strongly and positively related to team performance (H4c; $\beta = 0.77$, $SE = 0.08$, $p < .001$). Aggregated individual resilience was positively related to subjective well-being (H5a; $\beta = 0.63$, $SE = 0.10$, $p < .001$) and negatively to stress (H5b; $\beta = -0.50$, $SE = 0.10$, $p < .001$). However, no significant relationship between aggregated individual resilience and team performance was found (H5c; $\beta = 0.04$, $SE = 0.11$, $p = .709$).

The final two hypotheses, H6a and H6b, required comparing different relationships and evaluating if they were significantly different from each other. To assess this, we calculated the difference between the pairs of parameter estimates for the effects on team performance and health outcomes and estimated if these were significantly larger

Table 2 Descriptive statistics, internal reliability coefficients and bivariate correlations

	Mean	SD	r_{wg}	ICC(1)	ICC(2)	1	2	3	4	5	6	7
Age	44.12	9.67										
Team size	11.31	6.76						0.03	−0.12	−0.11	−0.09	−0.01
Individual resilience	4.50	0.73	0.74	0.06	0.35	−0.03		*0.85*	0.61*	0.74*	−0.68*	0.52*
Team resilience	4.61	0.88	0.69	0.13	0.54	−0.04		0.46*	*0.93*	0.58*	−0.54*	0.82*
Subjective well-being	2.90	0.64	0.70	0.12	0.52	0.00		0.58*	0.48*	*0.91*	−0.66*	0.44*
Stress	2.64	0.67	0.78	0.07	0.36	−0.05		−0.60*	−0.25*	−0.51*	*0.87*	-0.43
Team performance	4.60	0.83	0.70	0.13	0.53	−0.05		0.44*	0.77*	0.38*	−0.22*	*0.88*

Note. $N = 530$; *$p < .05$. Values in italics on the diagonal denote the Cronbach's alpha coefficients. Correlation coefficients below the diagonal represent correlations at the within-groups level and coefficients above the diagonal represent correlations at the between-groups level. Correlations between age and other constructs have only been reported at the within-groups level and correlations between team size and other constructs have only been reported at the between-groups level.

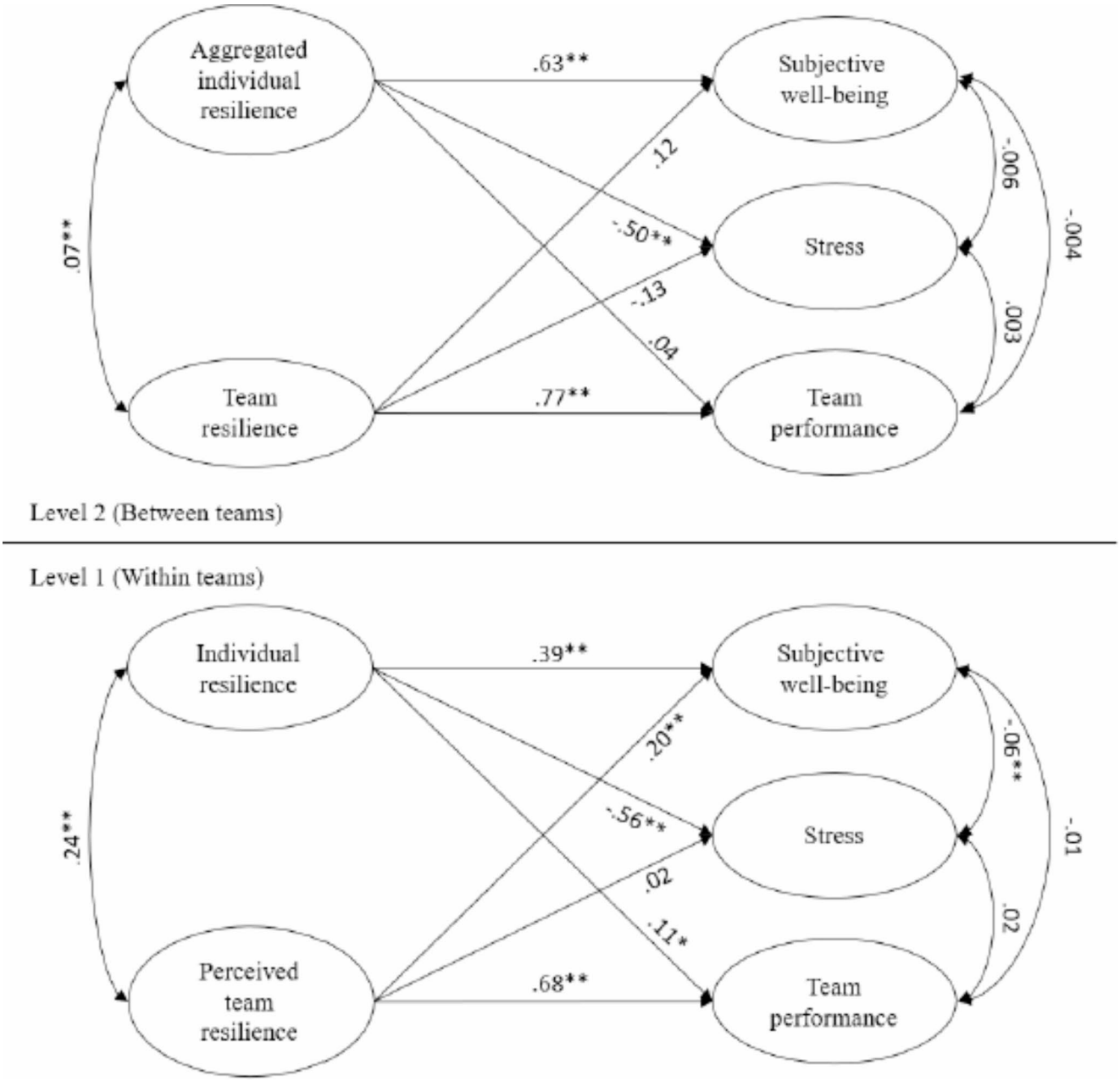

Fig. 1 Final structure of the multilevel SEM model. *$p < .01$, **$p < .001$

than 0. The individual (i.e., within-group) and team (i.e., between-groups) effects on perceived stress were expected to be negative thus, we reversed them prior to estimating the difference from the effect on team performance. For H6a, results indicated that the difference between the effect of team resilience on team performance was significantly higher than the effect of team resilience on perceived stress at the individual level ($\beta = 0.70$, $SE = 0.05$, $p < .001$) and the group level ($\beta = 0.64$, $SE = 0.11$, $p < .001$), and team resilience on subjective wellbeing at the individual level ($\beta = 0.49$, $SE = 0.05$, $p < .001$) and the group level ($\beta = 0.66$, $SE = 0.11$, $p < .001$). Therefore, H6a was fully supported. For H6b, the results showed the effect of individual resilience on perceived stress was stronger than its effect on team performance at both the individual level ($\beta = 0.45$, $SE = 0.06$, $p < .001$) and the group level ($\beta = 0.59$, $SE = 0.16$, $p < .01$). Also, the effect on individual resilience of subjective well-being was stronger than its effect on team performance at the individual level ($\beta = 0.28$, $SE = 0.05$, $p < .001$) and the group level ($\beta = 0.59$, $SE = 0.16$, $p < .001$). Therefore, H6b was also supported.

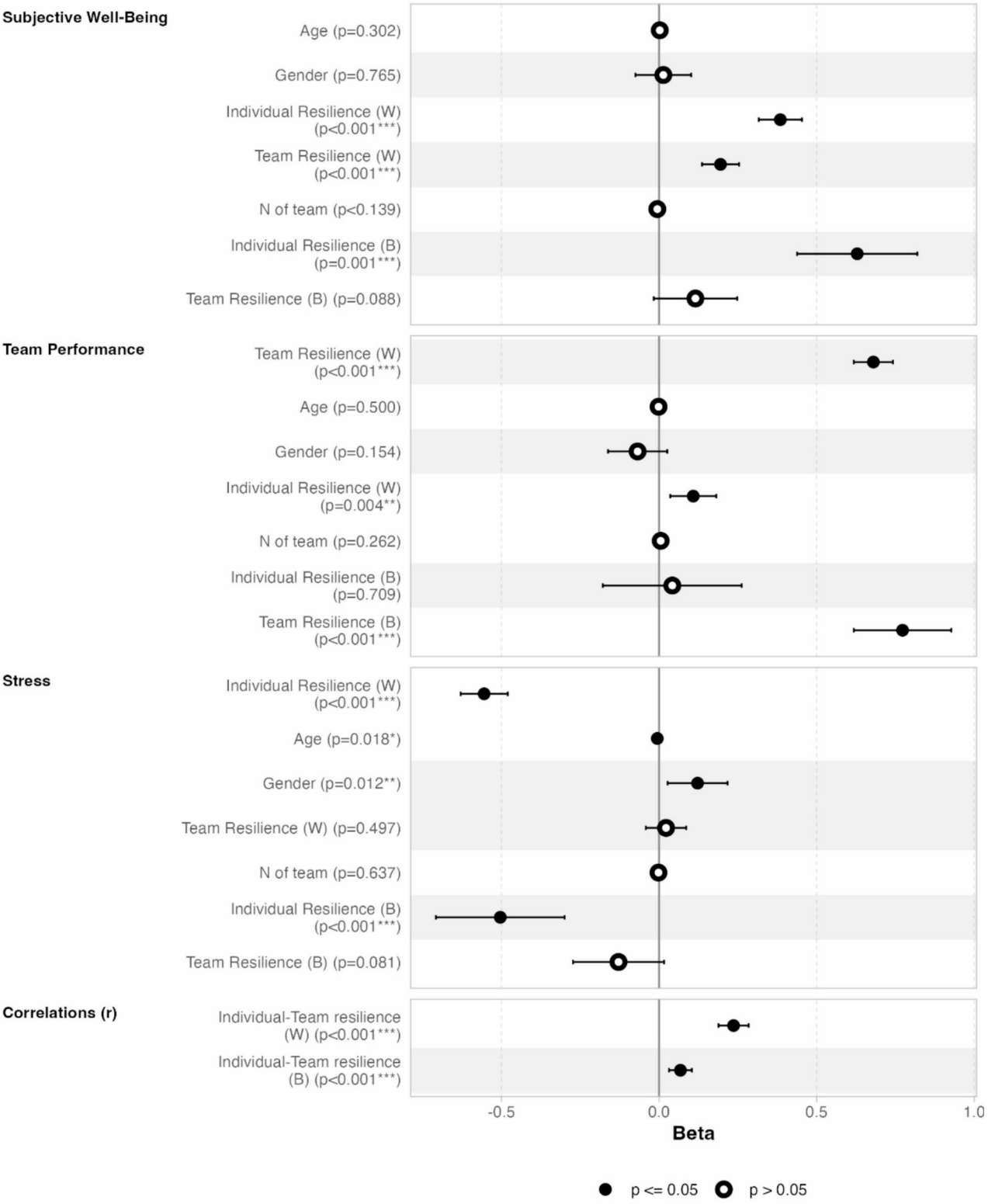

Fig. 2 Coefficient plot of model parameters

Discussion

The data broadly support our hypotheses, with a few exceptions. First, we found that individual and team resilience were related to each other at both the within- and between-group levels, in support of H1. At the individual level, individual resilience was related to psychological health (positively to subjective well-being and negatively to stress, in line with H2a and H2b, respectively) and team performance (in line with H2c). Furthermore, team resilience was related to only one aspect of psychological health (subjective well-being, in line with H3a, but not stress, in contrast to H3b) and team performance (in line with H3c). However, the performance-individual resilience association (H3c) was relatively weak.

At the group level, team resilience was unrelated to psychological health (neither well-being nor stress, in contrast to H4a and H4b, respectively) but strongly related to team performance (in line with H4c). Furthermore, aggregated individual resilience was related psychological health (positively to aggregated subjective well-being and negatively to stress, in line with H5a and H5b, respectively) but not to team performance (H5c). These findings should be interpreted with caution, since the association of team performance with team-level resilience is likely to be stronger than with individual resilience by virtue of how these variables were measured potential confounding by proximal and distal relationships across levels. Finally, we evaluated the differences of the effects of individual and team resilience on psychological health and team performance outcomes. The association between team resilience and team performance was stronger than the association between team resilience and psychological health outcomes, at both the individual and group levels (in line with H6a). Similarly, the association of individual resilience was stronger for psychological health outcomes than for team performance, at both the individual and group levels (in line with H6b).

The findings of the relationship between shared individual resilience and the three study outcomes are worthy of note. The relationship between aggregated individual resilience and subjective well-being was stronger than that of individual resilience. This differential impact could be due to vicarious learning, whereby team members model the behavior of resilient individual team members and as a consequence experience improved psychological well-being (Meese et al., 2021). It is also possible that the context of the COVID-19 pandemic had a substantial role in strengthening the group-level effects by making the importance of working within a team as a more prominent resource. The opposite, individual-level, equivalent is also possible: resilient individuals may have found it difficult to maintain a sense of control over their own well-being during this challenging time. The data indicate that having resilient individuals in a team matters for psychological health, whilst ensuring that teams sustain a resilient group dynamic of collaboration, communication, and support is critically important for team performance.

Lastly, both hypotheses on the differential strengths of the relationships between the types of resilience and outcomes were confirmed. Team resilience was more strongly related to team performance than to psychological health, at both individual and group levels. Previous studies that measured team resilience and team performance have consistently found a high correlation between team resilience and team performance at group level (e.g., Meneghel et al., 2016b; McEwen & Boyd, 2018). However, we cannot preclude the possibility of the halo effect which describes a cognitive bias when using evaluations (often unconscious) to make judgments about things that are unrelated (Cooper, 1981). Individuals who perceive themselves and/or their team to be a resilient team may also perceive themselves and/or their team to be good performers. Rosenzweick (2007) illustrated the halo effect by the tendency of experts to point to the high financial performance of a successful company and then spread its 'golden glow' to all of the company's attributes - clear strategy, strong values, and brilliant leadership.

Individual resilience was more strongly related to psychological health than to team performance outcomes, at the individual and group levels, corroborating McEwen and Boyd (2018). It is possible explanation that the effects of adversity on individual resilience and health are more pronounced when individuals are personally threatened by adversity, whereas adversity affects team processes negatively but the team capacity to withstand it may serve as a buffer against stress on team members (Hartwig et al., 2020). In the present study, it was not possible for practical reasons to take further measures of COVID-19 context other than the ones we included, for example in terms of how it was experienced by individuals or the teams, or by taking pre-and post-pandemic assessments.

In summary, our findings support both single-level and cross-level effects of individual and team resilience on psychological health and performance outcomes, broadly in line with our hypotheses and expectations based on existing research (Hartwig et al., 2020; Hartmann et al., 2019). Furthermore, team resilience was more strongly related to team performance than to psychological health, which is an expected artefact given that the two were measured at different levels. Yet, we advise caution with the interpretation of these findings and specifically their implications for practice. Notwithstanding methodological challenges related to measuring constructs across levels, the data provide strong evidence for a cross-level effects of both individual and team resilience on individual level outcomes.

Implications of findings

Our findings have several implications for managers and human resource management (HRM) practitioners. First, they emphasize the potential of developing individual resilience and team resilience in tandem and building on their interrelatedness and on potential interindividual transmission of affective states (Chen et al., 2015). Therefore, it would be useful to explore what impact, if any, teleworking may have on the emergence and maintenance of that process on psychological health. Although individual resilience is central to psychological health, team resilience is strongly related to team performance, and both are important at times of adversity and major challenges (Ipsen et al., 2020a, b). A review on resilience-building interventions indicated that resilience can counteract the potentially negative effects of exposure to stress and promote positive psychological functioning by enhancing individuals' resources such as self-efficacy, optimism, and social resources (Vanhove et al., 2016). Individual resilience can be developed through training to both enhance psychosocial functioning and improve performance (Robertson et al., 2015). However, particular attention should be placed on the design of such resilience-building programs including the selection of trainees and specifically prioritizing employees at risk of experiencing stress, using the most effective delivery format (e.g., one-to-one, classroom training, or at-distance training), and taking into account the employee and organizational characteristics (Vanhove et al., 2016).

To support individual resilience a focus can be placed on enhancing person-job fit to ensure that the person has the knowledge, skills, attitude, and experience compatible with the job requirements. The person-job fit can also be supported at onboarding process of new recruits, engaging them in the cultural values of the organization, and ensuring ongoing and consistent communication and feedback (Edwards & Cable, 2009). A team leader's style of management that is inclusive and supportive should also be encouraged to ensure that team members feel connected, have respectful interactions that enable them to work collaboratively and support each other (Lengnick-Hall et al., 2011) especially during challenging times.

In line with our definition of team resilience, attention on developing collective resilience by enhancing team interactions such as cooperation and social support is warranted. Several forms of team-based learning and development programs including team building and team coaching could help teams to create a resilient culture in which team members support each other, build sustaining bonds, and cooperate meaningfully. Such well-designed programs could help teams develop team resilience and sustain performance at the same time (Hawkins, 2014).

Limitations and future research directions

The boundaries for interpreting the findings of our study should be noted. In this study, we measured resilience as a multilevel phenomenon, examined different aspects of it, and showed that it can exist simultaneously at different levels with differential effects, thus clarifying previous literature. Future research should expand on these findings, focusing on the cross-over effects of individual and team resilience. The conceptual model of cross-over effects suggested by Fisher and colleagues may be a useful guide for future studies as it goes "beyond the simple recognition that resilience is a multilevel phenomenon (i.e., can exist at different levels) toward understanding how components of the resilience can affect one another across levels" (Fisher et al., 2022, p. 24).

Furthermore, a comparison between group and individual level variables will show team-level resilience to be naturally more strongly related to team-level outcomes, which confirms Hartmann et al. (2019) but contradicts Hartwig et al. (2020). Thus, specificity-matching is a limitation of the current but a consideration for future cross-level research and theorising on resilience.

In addition, the subjective well-being measure combines both affective and cognitive components of well-being, which are impacted by different factors (Tov, 2018). A possible bias therefore could have been that each relates differently to the predictors in this study, which future research should examine at a finer level of granularity. Similarly, the measure used to assess perceived stress did not focus exclusively on work-related domain. This might have affected the results of the study because individual- and team-level resilience in context of employment might have shared a stronger association with work-related stress as opposed to general stress.

Our study's cross-sectional design has reduced our ability to observe causal relationships. Future work should employ longitudinal designs to confirm possible cause-effect relationships and also how different types of resilience co-evolve dynamically over time. Moreover, it is possible that reverse causality exists. Individuals with stronger psychological health (experiencing less stress, being satisfied with their job, and feeling positive emotions) are more likely to feel resilient. Equally, a team with higher levels of performance could feel more resilient and empowered to handle setbacks. Although we tested this proposition (the results are available from the first author), we could not draw any conclusion about the direction of effects as the reverse causality model failed to converge and therefore it was not statistically possible to compare it with our proposed model.

The use of self-report measures was another limitation as it runs the risk of common method bias. Although we

used CFA to successfully test for common method variance and levels of agreement within teams on team resilience, team performance, and aggregated individual resilience, an objective source of measurement (e.g., team manager's appraisal of team performance) would have provided additional validation of our findings. Additionally, some may argue against an odd-numbered Likert-type response scale but, in this case, we decided that a graded forced format scale allow for a better differentiation in responses.

Although in the analyses we controlled for team size (i.e., results are the same regardless of the number of individuals in the team), our relatively modest sample size (530 employees nested within 68 teams from two organizations) prevents us from generalizing the findings to the entire working population. It would be useful to include in future research a larger sample across different industry sectors, with a separate consideration for small and medium size enterprises (SMEs) as team dynamics may be more pronounced in smaller teams, would be useful to include in future research.

In addition, future research should also focus on resilience in the context of teleworking or home working and hybrid working (home and office-based work) and compare the findings between those who work in more permanent virtual or hybrid teams and those forced to operate in such situations. In the present study all workers were asked to operate remotely, and this may or may not have been the way they typically worked before the Covid-19 pandemic. If upwards trends in teleworking since the pandemic (OECD, 2021) lead to wider acceptance of hybrid models and therefore more fragmented work teams (a part of the team in the office and another part working remotely), the mechanisms that govern resilience may be affected. Accordingly, future research could examine the effects of hybrid models of work on the development of resilience and psychological health and team performance. This line of research could provide Human Resources and other organizational practitioners with practical insights on how to enhance psychological health within teams in a context of hybrid forms of work.

Conclusion

This study explored how different types of resilience, specifically, as a characteristic of the individual worker or their team and as perceived by the individual or shared among the group, relate to health and work outcomes. Using a multilevel approach, we clarified the link between individual and team resilience and revealed their combined effects on psychological health and team performance. Overall, the data indicated that although both types of resilience are linked to outcomes, individual resilience is more strongly linked with psychological health and team resilience is more strongly linked to team performance. The findings highlight the importance for future research and practice to address individual and team resilience jointly as both a property of the individual and of their team in order to support psychological health and team performance.

Author contributions All authors contributed to the study conception and design. Data analysis was performed by Jasmeet Singh and George Michaelides. The first draft of the manuscript was written by Nadine Mellor with contributions from the rest of the authors. All authors read and approved the final manuscript.

Data availability Data and R-code for this study are publicly available here: https://osf.io/y3amq/?view_only=15c401969efa45599c1e3159a6619a7d.

Declarations Nadine Mellor and George Michaelides received consultant honoraria from Uside.

Informed consent This research involved human participants and was approved by the USIDE research ethics committee. Informed consent was obtained from all participants.

Conflict of interest We have no known conflict of interest to disclose.

References

Algoe, S. B., & Fredrickson, B. L. (2011). Emotional fitness and the movement of affective science from lab to field. *American Psychologist*, *66*(1), 35–42. https://doi.org/10.1037/a0021720

Alliger, G. M., Cerasoli, C. P., Tannenbaum, S. I., & Vessey, W. B. (2015). Team resilience.

Bakker, A. B., & Bal, P. M. (2010). Weekly work engagement and performance: A study among starting teachers. *Journal of Occupational and Organizational Psychology*, *83*(1), 189–206. https://doi.org/10.1348/096317909X402596

Bakker, A. B., Euwema, M. C., & Demerouti, E. (2005). Job resources buffer the impact of job demands on Burnout. *Journal of Occupational Health Psychology*, *10*(2), 170–180. https://doi.org/10.1037/1076-8998.10.2.170

Bandura, A. (1977). *Social learning theory*. Prentice-Hall.

Bardoel, E. A., Pettit, T. M., De Cieri, H., & McMillan, L. (2014). Employee resilience: An emerging challenge for HRM. *Asia Pacific Journal of Human Resources*, *52*(3), 279–297. https://doi.org/10.1111/1744-7941.12033

Beehr, T. A., Farmer, S. J., Glazer, S., Gudanowski, D. M., & Nair, V. N. (2003). The enigma of social support and occupational stress: Source congruence and gender role effects. *Journal of Occupational Health Psychology*, *8*(3), 220–231. https://doi.org/10.1037/1076-8998.8.3.220

Bellinghausen, L., Collange, J., Botella, M., Emery, J., & Albert, E. (2009). Validation factorielle de l'échelle française de stress perçu en milieu professionnel. *Sante Publique*, *21*(4), 365–373. https://doi.org/10.3917/spub.094.0365

Bliese, P. D. (2000). Within-group agreement, non-independence, and reliability: Implications for data aggregation and analysis. In K. J. Klein, & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions* (pp. 349–381). Jossey-Bass.

Bowers, C., Kreutzer, C., Cannon-Bowers, J., & Lamb, J. (2017). Team resilience as a second-order emergent state: A theoretical model and research directions. *Frontiers in Psychology, 8*, 1360.

Britt, T. W., Shen, W., Sinclair, R. R., Grossman, M. R., & Klieger, D. M. (2016). How much do we really know about employee resilience? *Industrial and Organizational Psychology: Perspectives on Science and Practice*, *9*(2), 378–404. https://doi.org/10.3389/fpsyg.2017.01360

Carmeli, A., Friedman, Y., & Tishler, A. (2013). Cultivating a resilient top management team: The importance of relational connections and strategic decision comprehensiveness. *Safety Science*, *51*(1), 148–159. https://doi.org/10.1016/j.ssci.2012.06.002

Chen, S., Westman, M., & Hobfoll, S. E. (2015). The commerce and crossover of resources: Resource conservation in the service of resilience. *Stress and Health*, *31*(2), 95–105. https://doi.org/10.1002/smi.2574

Cohen, S. (2004). Social Relationships and Health. *American Psychologist*, *59*(8), 676–684. https://doi.org/10.1037/0003-066X.59.8.676

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behaviour*, *24*(4), 385–396. https://www.jstor.org/stable/2136404 available at:.

Cooper, W. H. (1981). Ubiquitous halo. *Psychological Bulletin*, *90*(2), 218–244. https://doi.org/10.1037/0033-2909.90.2.218

Crane, M. F., & Searle, B. J. (2016). Building resilience through exposure to stressors: The effects of challenges versus hindrances. *Journal of Occupational Health Psychology*, *21*(4), 468–479. https://doi.org/10.1037/a0040064

Croon, M. A., & van Veldhoven, M. J. P. M. (2007). Predicting group-level outcome variables from variables measured at the individual level: A latent variable multilevel model. *Psychological Methods*, *12*(1), 45–57. https://doi.org/10.1037/1082-989X.12.1.45

Davydov, D. M., Stewart, R., Ritchie, K., & Chaudieu, I. (2010). Resilience and mental health. *Clinical Psychology Review*, *30*(5), 479–495. https://doi.org/10.1016/j.cpr.2010.03.003

Diener, E. (1994). Assessing subjective well-being: Progress and opportunities. *Social Indicators Research*, *31*(2), 103–157. https://doi.org/10.1007/BF01207052

Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, *125*(2), 276–302. https://doi.org/10.1037/0033-2909.125.2.276

Edwards, J. R., & Cable, D. M. (2009). The value of value congruence. *Journal of Applied Psychology*, *94*(3), 654–677. https://doi.org/10.1037/a0014891

Fisher, D. M., Ragsdale, J. M., & Fisher, E. C. S. (2019). The importance of definitional and temporal issues in the study of resilience. *Applied Psychology: An International Review*, *68*(4), 583–620. https://doi.org/10.1111/apps.12162

Fisher, D. M., LeNoble, C. A., & Vanhove, A. J. (2022). An integrated perspective on individual and team resilience: Moving from multilevel structure to cross-level effects. *Applied Psychology*, 1–32. https://doi.org/10.1111/apps.12419

Flint-Taylor, J., & Cooper, C. L. (2017). Team resilience: Shaping up for the challenges ahead. In M. F. Crane (Ed.), *Managing for resilience: A practical guide for employee wellbeing and organizational performance* (pp. 129–149). Routledg.

Folkman, S., & Moskowitz, J. T. (2000). Positive affect and the other side of coping. *American Psychologist*, *55*(6), 647–654. https://doi.org/10.1037/0003-066X.55.6.647

Fredrickson, B. L., & Joiner, T. (2002). Positive emotions trigger upward spirals toward emotional well-being. *Psychological Science*, *13*(2), 172–175. https://doi.org/10.1111/1467-9280.00431

Friborg, O., Hjemdal, O., Rosenvinge, J. H., & Martinussen, M. (2003). A New rating scale for adult resilience: What are the central protective resources behind healthy adjustment? *International Journal of Methods in Psychiatric Research*, *12*(2), 65–76. https://doi.org/10.1002/mpr.143

Frisch, J. U., Häusser, J. A., van Dick, R., & Mojzisch, A. (2014). Making support work: The interplay between social support and social identity. *Journal of Experimental Social Psychology*, *55*, 154–161. https://doi.org/10.1016/j.jesp.2014.06.009

Goddard, R. D., Hoy, W. K., & Hoy, A. W. (2004). Collective efficacy beliefs: Theoretical developments, empirical evidence, and future directions. *Educational Researcher*, *33*(3), 3–13. https://doi.org/10.3102/0013189X033003003

Gucciardi, D. F., Crane, M., Ntoumanis, N., Parker, S. K., Thøgersen-Ntoumani, C., Ducker, K. J., Peeling, P., Chapman, M. T., Quested, E., & Temby, P. (2018). The emergence of team resilience: A multilevel conceptual model of facilitating factors. *Journal of Occupational and Organizational Psychology*, *91*(4), 729–768. https://doi.org/10.1111/joop.12237

Hartmann, S., Weiss, M., Newman, A., & Hoegl, M. (2019). Resilience in the workplace: A multilevel review and synthesis. *Applied Psychology*, *69*(3). https://doi.org/10.1111/apps.12191

Hartwig, A., Clarke, S., Johnson, S., & Willis, S. (2020). Workplace team resilience: A systematic review and conceptual development. *Organizational Psychology Review*, *10*(11), 169–200. https://doi.org/10.1177/2041386620919476

Hawkins, P. (2014). *Leadership Team Coaching: Developing Collective Transformational Leadership*. Kogan Page.

Hobfoll, S. E. (2011). Conservation of resources theory: Its implication for stress, health, and resilience. In S. Folkman (Ed.), The Oxford handbook of stress, health, and coping (pp. 127–147). Oxford University Press. How teams flourish under pressure. *Organizational Dynamics, 44*(3), 176–184. https://doi.org/10.1016/j.orgdyn.2015.05.003

Ipsen, C., Karanika-Murray, M., & Nardelli, G. (2020a). Guest editorial: Addressing mental health and organisational performance in Tandem: A challenge and an opportunity for bringing together what belongs together. *Work & Stress, 34*(1), 1–4. https://doi.org/10.1080/02678373.2020.1719555

Ipsen, C., Kirchner, K., & Hansen, J. P. (2020b). Experiences of working from home in times of covid-19 International survey conducted the first months of the national lockdowns. https://doi.org/10.11581/dtu:00000085

James, L. R., Demaree, R. G., & Wolf, G. (1984). Estimating within-group interrater reliability with and without response bias. *Journal of Applied Psychology*, *69*(1), 85–98. https://doi.org/10.1037/0021-9010.69.1.85

Ker, D., Montagnier, P., & Spiezia, V. (2021). Measuring telework in the COVID-19 pandemic. *Documents de travail de l'OCDE sur l'économie numérique*, n° 314, Éditions OCDE. https://doi.org/10.1787/20716826

Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd ed.). Guilford Press.

Kossek, E. E., Bodner, T. E., Hammer, L. B., & Pichler, S. (2011). Workplace social support and work-family conflict: A meta-analysis clarifying the influence of general and work-family-specific supervisor and organizational support. *Personnel Psychology*, *64*(2), 289–313. https://doi.org/10.1111/j.1744-6570.2011.01211.x

Kozlowski, S. W. J., & Ilgen, D. R. (2006). Enhancing the effectiveness of work groups and teams. *Psychological Science in the Public Interest*, *7*(3), 77–124. https://doi.org/10.1111/j.1529-1006.2006.00030.x

Kozlowski, S. W. J., & Klein, K. J. (2000). A multilevel approach to theory and research in organizations: Contextual, temporal, and emergent processes. In K. J. Klein, & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions* (pp. 3–90). Jossey-Bass.

Lacerenza, C. N., Marlow, S. L., Tannenbaum, S. I., & Salas, E. (2018). Team development interventions: Evidence-based approaches for improving teamwork. *American Psychologist*, *73*(4), 517–531. https://psycnet.apa.org/doi/10.1037/amp0000295

LeBreton, J. M., & Senter, J. L. (2008). Answers to 20 questions about interrater reliability and interrater agreement. *Organizational Research Methods*, *11*(4), 815–852. https://doi.org/10.1177/1094428106296642

Lengnick-Hall, C. A., Beck, T. E., & Lengnick-Hall, M. L. (2011). Developing a capacity for organizational resilience through strategic human resource management. *Human Resource Management Review*, *21*(3), 243–255. https://doi.org/10.1016/j.hrmr.2010.07.001

Liu, Y., Wang, Z., Zhou, C., & Li, T. (2014). Affect and self-esteem as mediators between trait resilience and psychological adjustment. *Personality and Individual Differences*, *72*, 86–97. https://doi.org/10.1016/j.paid.2014.03.023

Luthans, F., Avolio, B. J., Avey, J. B., & Norman, S. M. (2007). Positive psychological capital: Measurement and relationship with performance and satisfaction. *Personnel Psychology*, *60*(3), 541–572. https://psycnet.apa.org/doi/10.1111/j.1744-6570.2007.00083.x

Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist*, *56*(3), 227–238. https://doi.org/10.1037/0003-066X.56.3.227

McEwen, K., & Boyd, C. M. (2018). A measure of team resilience: Developing the Resilience at Work Team Scale. *Journal of Occupational and Environmental Medicine*, *60*(3), 258–272. https://journals.lww.com/joem/Abstract/2018/03000/A_Measure_of_Team_Resilience__Developing_the.8.aspx

Meese K. A, Colón-López A, Singh J. A, Burkholder G. A., & Rogers D. A. (2021). Healthcare is a Team Sport: Stress, Resilience, and Correlates of Well-Being Among Health System Employees in a Crisis. *Journal of Healthcare Management*, *66*(4), 304–322. https://doi.org/10.1097/JHM-D-20-00288

Mellor, N., Dufoix, F., Saunder, L., & Collange, J. (2017). Le bien-être subjectif au travail et sa relation avec le soutien social perçu. *Archives des Maladies Professionnelles et de l'Environnement*, *79*(1), 23–33. https://doi.org/10.1016/j.admp.2017.08.003

Meneghel, I., Salanova, M. and Martínez, I.M. (2016a). Feeling good makes us stronger: how team resilience mediates the effect of positive emotions on team performance. *Journal of Happiness Studies*, *17*(1), 239–255. https://doi.org/10.1007/s10902-014-9592-6

Meneghel, I., Martínez, I. M., & Salanova, M. (2016b). Job-related antecedents of team resilience and improved team performance. *Personnel Review*, 45(3), 505–522. https://doi.org/10.1108/PR-04-2014-0094

O'Connor, D. B., Aggleton, J. P., Chakrabarti, B., Cooper, C. L., Creswell, C., Dunsmuir, S., Fiske, S. T., Gathercole, S., Gough, B., Ireland, J. L., Jones, M. V., Jowett, A., Kagan, C., Karanika-Murray, M., Kaye, L. K., Kumari, V., Lewandowsky, S., Lightman, S., Malpass, D., Meins, E., & Armitage, C. J. (2020). Research priorities for the COVID-19 pandemic and beyond: A call to action for psychological science. *British Journal of Psychology*, *111*(4), 603–629. https://doi.org/10.1111/bjop.12468

OECD. (2021). Teleworking in the COVID-19 pandemic: Trends and prospects. *OECD Policy Responses to Coronavirus (COVID-19)*. OECD Publishing, Paris. https://doi.org/10.1787/72a416b6-en

Ong, A. D., Bergeman, C. S., Bisconti, T. L., & Wallace, K. A. (2006). Psychological resilience, positive emotions, and successful adaptation to stress in later life. *Journal of Personality and Social Psychology*, *91*(4), 730–749. https://doi.org/10.1037/0022-3514.91.4.730

Parry, S. (2020). *Fit indices commonly reported for CFA and SEM*. Cornell University Statistical Consulting Unit. Retrieved on 22/10/2021. At https://www.hrstud.unizg.hr/_download/repository/SEM_fit.pdf

R Core Team. (2021). R: A language and environment for statistical computing. *R Foundation for Statistical Computing*, Vienna, Austria. https://www.R-project.org/

Rhee, M. (2007). The time relevance of social capital. *Rationality and Society*, *19*(3), 367–389. https://doi.org/10.1177/1043463107080451

Rosenzweick, P. (2007). *The halo effect and the eight other business delusions that deceive managers*. Simon & Schuster Ltd.

Rosseel, Y. (2012). Lavaan: An R Package for structural equation modeling. *Journal of Statistical Software*, *48*(2), 1–36. https://doi.org/10.18637/jss.v048.i02

Salanova, M., Llorens, S., Cifre, E., & Martínez, I. M. (2012). We need a hero! Toward a validation of the Healthy and Resilient Organization (HERO) Model. *Group & Organization Management*, *37*(6), 785–822. https://doi.org/10.1177/1059601112470405

Schaefer, S., Boylan, J. M., van Reekum, C. M., Lapate, R. C., Norris, C. J., Ryff, C. D., & Davidson, R. J. (2013). Purpose in life predicts better emotional recovery from negative stimuli. *PLoS ONE*, *8*(11). https://doi.org/10.1371/journal.pone.0080329

Schloerke B, Cook D, Larmarange J, Briatte F, Marbach M, Thoen E, Elberg A, Crowley J (2024). *GGally: Extension to 'ggplot2'*. R package version 2.2.1, https://CRAN.R-project.org/package=GGally

Sharma, S., & Sharma, S. K. (2016) Team resilience: Scale development and validation. *Vision: The Journal of Business Perspective*, *20*(1), 37–53. https://doi.org/10.1177/0972262916628952

Shin, J., Taylor, M. S., & Seo, M.-G. (2012). Resources for change: The relationships of organizational inducements and psychological resilience to employees' attitudes and behaviors toward organizational change. *Academy of Management Journal*, *55*(3), 727–748. https://doi.org/10.5465/amj.2010.0325

Steffens, N. K., Haslam, S. A., Schuh, S., Jetten, J., & van Dick, R. (2017). A meta-analytic review of social identification and health in organizational contexts. *Personality and Social Psychology Review*. https://doi.org/10.1177/1088868316656701

Stoverink, A. C., Chiaburu, D. S., Li, N., & Zheng, X. (2018). Supporting team citizenship: The influence of team social resources on team-level affiliation-oriented and challenge-oriented behaviour. *Human Resource Management Journal*, *28*(2), 201–215. https://doi.org/10.1111/1748-8583.12173

Stoverink, A. C., Kirkman, B. L., Mistry, S., & Rosen, B. (2020). Bouncing back together: Toward rhetorical model of work team resilience. *The Academy of Management Review*, *45*(2), 395–422. https://doi.org/10.5465/amr.2017.0005

Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behavior. In S. Worchel, & W. Austin (Eds.), *Psychology of intergroup relations* (2nd ed., pp. 7–24). Nelson-Hall.

Tov, W. (2018). Well-being concepts and components. In E. Diener, S. Oishi, & L. Tay (Eds.), *Handbook of well-being*. DEF Publishers.

Vanhove, A. J., Herian, M. N., Perez, A. L. U., Harms, P. D., & Lester, P. B. (2016). Can resilience be developed at work? A

meta-analytic review of resilience-building programme effectiveness. *Journal of Occupational and Organizational Psychology*, *89*(2), 278–307. https://doi.org/10.1111/joop.12123

Weick, K. E. (2015). Ambiguity as Grasp: The Reworking of Sense. *Journal of Contingencies and Crisis Management, 23*(2), 117–123. https://doi.org/10.1111/1468-5973.12080

West, B.J., Patera, J.L., & Carsten, M.K. (2009). Team level positivity: Investigating positive psychological capacities and team level outcomes. *Journal of Organizational Behavior*, *30*(2), 249–267. https://doi.org/10.1002/job.593

Winwood, P., Colon, R., & McEwen, K. (2013). A practical measure of workplace resilience. *Journal of Occupational and Environmental Medicine*, *35*(10), 1205–1212. https://www.jstor.org/stable/48500326

World Health Organization. (2020). *COVID-19 disrupting mental health services in most countries, WHO survey*. Retrieved on 22/10/2021 at https://www.who.int/news/item/05-10-2020-covid-19-disrupting-mental-health-services-in-most-countries-who-survey