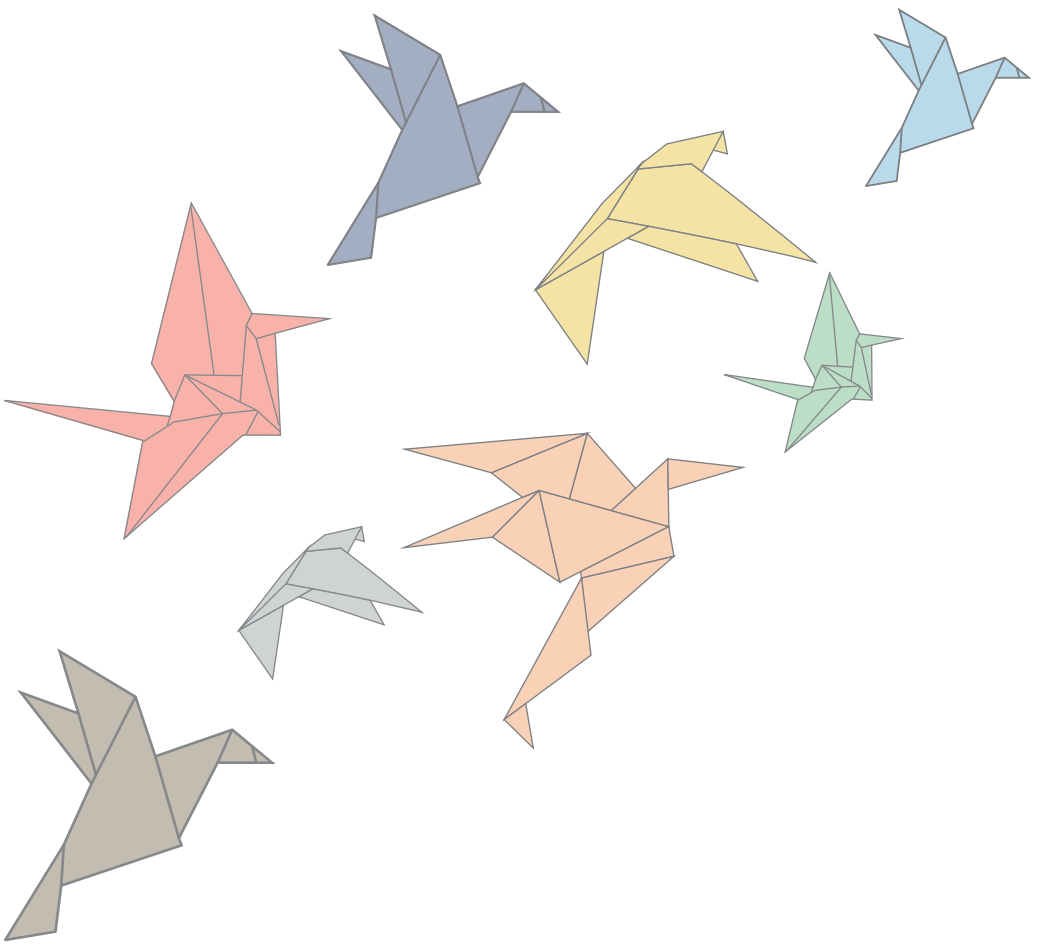
Happy and Productive Groups:

A compendium of multimethod studies on group positive affect from Positive Psychology



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Programa de Doctorado en Psicología

Escuela de Doctorado de la Universitat Jaume I

Happy and Productive Groups: A compendium of multimethod studies on group positive affect from Positive Psychology

Grupos felices y productivos: Un compendio de estudios multimétodo sobre el afecto positive grupal desde la Psicología Positiva.

Memoria presentada por Jonatan Peñalver González para optar al grado de doctor por la Universitat Jaume I

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"La positividad nos expande. La verdad fundamental de las emociones positivas es que abre nuestros corazones, nos convierte en personas más creativas y receptivas"

Barbara Fredrickson, Autora de la Broaden-and-Build Theory

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PRÓLOGO

十人十色 (*ju nin, to iro*)

Traducido como "10 personas, 10 colores" hace referencia a que cada persona tiene sus propias ideas, sus propios gustos, su forma de ver la realidad e incluso su forma de afrontar los problemas. En definitiva, que cada persona es distinta entre sí, sin ser por ello algo negativo. Sin embargo, tras reflexionar la relación del proverbio con esta tesis doctoral, me percaté que echaba algo en falta. Diez personas pueden ser distintas, y aún así pueden perseguir una meta en común, desarrollar una emoción colectiva por encima de deseos individuales, pero que se nutra de cada uno de ellos. Así es como completé el proverbio buscándole un nuevo significado:

十人十色一心一目的 (*ju nin to iro, isshin, ichimoku teki*)

10 personas, 10 colores, 1 corazón, 1 propósito.

Esta tesis doctoral representa la nueva forma del proverbio en dos sentidos. Primero, porque justamente de ese tema trata la investigación que he realizado. Una emoción, un corazón que surge cuando las personas interaccionan durante su trabajo. En segundo lugar, he aprendido que cualquier objetivo puede ser alcanzado, si tienes a la gente adecuada a tu lado compartiendo la misma pasión por el trabajo que hacéis.

"*La felicidad se puede resumir en tres palabras: Los demás importan*"
Christopher Peterson (1950 – 2012).
Creador de las Fortalezas del Carácter, junto con Martin Seligman.

CHAPTER 1

General Introduction

Traditionally, psychology has focused on the study of negative aspects of the human being, such as stress, which has biased the study of the human mind and limited the explanatory models (Vecina, 2006). Positive Psychology, defined as the scientific field of flourishing or optimal functioning of people, groups, and institutions (Gable & Haidt, 2005), arises as an alternative response to the traditional theoretical framework and promotes the study of more constructive variables (e.g., positive affect, work engagement; Seligman, 1999). To this day, positive psychology continues to inspire new theories and studies (Compton, & Hoffman, 2019).

Considering the significance of positive affect, it may be considered one of the most widely studied topics because it influences a variety of cognitive, social, and biological processes in several domains (Barrett, Lewis, Haviland-Jones, 2018). For example, positive affect motivates people to explore limits (Fredrickson & Cohn, 2008), enhances bonds and social relationships (Spoor & Kelly, 2004), promotes resilience (Gloria, & Steinhardt, 2016), is related to better health (Hunter, Cross, & Pressman, 2018), and facilitates daily work engagement (Miralles, Navarro, & Unger, 2015). Positive affect has been defined as an umbrella term for an extensive array of positive emotional experiences, including positive emotions and positive mood (Fernández-Abascal, 2009). According to the Circumplex model of affect (Russell, 1980; Russell & Barrett, 1999), positive affect is based on two core dimensions: pleasure and arousal. The horizontal dimension ranges from unpleasant to pleasant, whereas the vertical dimension ranges from low to high activation. Hence, positive affect comprises high-activation pleasant emotions (e.g., enthusiastic, glad, happy, excitement, joy,

contentment, cheerful, optimistic) and low-activation pleasant emotions (e.g., comfortable, drowsy, calm, relaxation, contentment).

In the organizational context, numerous studies have shown that positive affect not only occurs at the individual level, but also at the group level, through several mechanisms (e.g., emotional contagion) (Barsade & Gibson, 2007; Meneghel, Salanova, & Martínez, 2016). Group positive affect based on affective convergence is defined as the affective composition of the group members (Barsade & Gibson, 1998), resulting from people feeling similar levels of individual emotions when they work together (Barsade & Knight, 2015). Drawing on the functionality of groups for organizations, several authors have determined that groups participate in the organizational development through their involvement in wellbeing (Greenaway, et al., 2015), decision-making (Kugler, Kausel, & Kocher, 2012; Tindale, & Winget, 2019), and productivity (Flood, & Klausner, 2018). Therefore, it is important to study how group positive affect drives group behaviours and group outcomes.

Challenges for group positive affect research

This dissertation attempts to contribute to group positive affect research by attempting to answer some fundamental research questions, grouped into three specific research challenges that will serve as a general outline for the primary objectives of the dissertation.

CHALLENGE 1. What is the relationship between group positive affect and group performance?

Research has extensively studied the relationship between positive affect and performance (Walsh, Boehm, & Lyubomirsky, 2018), concluding that happy workers

achieve better performance than unhappy workers (Christensen, 2017; Wright & Cropanzano, 2007). Broaden and Build Theory (Fredrickson, 1998, 2001) makes it possible to understand how the aforementioned relationship works. Positive affect (e.g., joy, contentment, interest) broadens people's momentary thought-action repertoires (e.g., flexibility, creativity) and builds enduring personal resources (i.e., physical, social, psychological, intellectual). Extending this theory to the group level of analysis, group positive affect (i.e., joy) broadens the group interactions (i.e., developing others' ideas, encouraging communication) and builds enduring group social resources (e.g., a sense of membership, social support), which enhances creative group performance (Rhee, 2007; Rhee, & Yoon, 2012). However, despite its relevance for groups, few studies have openly addressed the effect of group positive affect on group performance and examined the psychosocial mechanisms that could explain this relationship (Kelly & Spoor, 2013).

CHALLENGE 2. What are the organizational antecedents of group positive affect?

Although the interest in studying group positive affect is growing (Barsade & Knight, 2015), it is remarkable to see that attention has been paid to identifying what factors are consequences of positive affect, such as productivity, instead of what factors can be considered antecedents. Therefore, in order for groups to obtain benefits from the enhancer effects of group positive affect, it is also important to identify its potential antecedents. As Bakker and Demerouti (2017) noted, Job Demands-Resources Theory can identify a variety of work characteristics, grouped into two types: job resources and job demands. It is plausible to assume that resourceful job environments motivate and stimulate group members in order to increase group wellbeing (i.e., group positive

affect), whereas job demands, understood as a stressful job characteristics, can harm group wellbeing. Moreover, considering that organizations are multilevel structures that require a multilevel approach (González-Romá, & Hernández, 2017), the antecedents identified should integrate the multiple levels of organizations (i.e., organizational, group), such as human resources practices.

CHALLENGE 3. Under what circumstances do high levels of group positive affect lead to low levels of group performance?

At the individual level, research has shown that positive states could lead people to obtain negative results. For instance, positive affect may cause people to overestimate ideas and opportunities (Baron, Hmieleski, & Henry, 2012), and unrealistic optimism may endorse fruitless perseverance on the task (Mens, Scheier, & Carver, 2016). Peiró and colleagues (Peiró, Ayala, Tordera, Lorente, & Rodríguez, 2014; Peiró, Kozusznik, Rodríguez-Molina, & Tordera, 2019) referred to these anomalous patterns as "the dark side" of the happy-productive thesis. Taking into account the analogous process at the group level, researchers have started to assume that group positive affect might not always be related to productivity. Specifically, these collectively experienced positive states build a single-shared reality, providing workers with a tendency to inhibit viewpoints that are misaligned with the group thinking (George, & King, 2007). For instance, Tsai, Chi, Grandey, and Fung (2011) corroborate this idea by discovering that happy groups with high trust among members achieved poor creative performance. Based on previous studies, it is necessary to expand the research to other constructs (i.e., team work engagement, group competences, group efficacy, transformational leadership) that facilitate the understanding of this anomalous relationship between group positive affect and group performance.

Outline of the dissertation

The present dissertation is composed of five chapters that address the aforementioned challenges in group positive affect research. Introducing the topic, Chapter 2 provides a theoretical review of group positive affect, followed by three empirical studies (Chapters 3, 4 and 5). Finally, Chapter 6 summarizes the topic by providing general conclusions. Table 1 provides an overview of the challenges addressed in each chapter.

Table 1.

Overview of research challenges targeted in each chapter.

		Chapters		
		3	4	5
Challenge **1**	What is the relationship between group positive affect and group performance?	✓		
Challenge **2**	What are the organizational antecedents of group positive affect?		✓	
Challenge **3**	Under what circumstances do high levels of group positive affect lead to low levels of group performance?			✓

Chapter 2, entitled "*Group positive affect and beyond: A multilevel integrative review and future research agenda*" is the theoretical chapter and offers a comprehensive view of the state-of-the-art of group positive affect in the organizational context. Following an exhaustive search and selection process, 43 studies were analysed in order to extract the most relevant issues in group positive affect research. At the end, the chapter suggests a brief research agenda, which is the starting point of this dissertation and guides the following three empirical studies.

Chapter 3, entitled "*Happy-productive groups: How positive affect is linked to performance through social resources*", is the first empirical chapter of the present dissertation. Describing two studies carried out with independent samples (Study 1, 112 small groups; Study 2, 417 groups), the chapter focuses on the mediating role of group social resources as a psychosocial mechanism that explains the relationship between group positive affect and group performance. In addition, it proposes that the happy-productive group is an analogous psychosocial process to the happy-productive worker.

Chapter 4, entitled "*What makes a group happy? Enhancing group positive affect through multilevel antecedents"*, is the second empirical chapter in the present dissertation. In this chapter, through 432 groups from 116 organizations, the role played by multilevel organizational antecedents (i.e., team resources, team demands, HR practices) in explaining group positive affect is more deeply explored.

Chapter 5, entitled "*Is there a limit to positivity? Glimpsing a new configuration of happy-and-productive groups*", is the last empirical chapter in the present dissertation. Extending the dark side patterns of the happy-productive worker thesis to the group level, the chapter reveals four different patterns (i.e., happy-productive, happy-unproductive, unhappy-unproductive, unhappy-productive). In order to test the hypotheses, data from 432 groups and their supervisors in 116 organizations are used.

Finally, *Chapter 6,* based on the preceding chapter, integrates the findings with the previously discussed research challenges. It also points out the theoretical contributions, practical implications, limitations, and future research agenda on group positive affect.

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CHAPTER 2

Group positive affect and beyond: An integrative review and future research agenda[1]

Abstract

Group positive affect is defined as homogeneous positive affect among group members that emerges when working together. Considering that previous research has shown a significant relationship between group positive affect and a wide variety of group outcomes, it is crucial to boost our knowledge about this construct in the work context. Through the PsycNET and Proquest Central databases, an integrative review was conducted to identify articles about group positive affect published prior to March 2019. A total of 42 articles were included, analysed, and divided into five major themes that emerged: operationalization, antecedents, outcomes, mediators, and pitfalls of group positive affect. A summary conclusion is that group positive affect is related to leadership, job demands, job resources, diversity/similarity, group processes, and contextual factors, all of which influence the development of several outcomes and different types of wellbeing at the individual and group levels. However, with specific combinations of other conditions (e.g., group trust, negative affect, interaction), high levels of group positive affect could cause harmful results. The paper closes by suggesting a brief research agenda for future work.

Keywords

Group Positive Affect, Integrative review, Antecedents, Outcomes, Mediators, Pitfalls, Group performance, Happy-productive group.

[1] Chapter 2 has been submitted for publication as: Peñalver, J., Salanova, M., & Martínez, I. M. Group positive affect and beyond: An integrative review and future research agenda.

Introduction

In the words of Barsade and Gibson (2007), we are facing an "*affective revolution*", due to the growing interest in understanding the role that emotions play in organizations. Although the attention has mainly been placed on individuals (Barrett, Lewis, Haviland-Jones, 2018), authors have increasingly begun to see the relevance of the figure of the group[2] within the organization because groups contribute to wellbeing (Wilson, DeJoy, Vandenberg, Richardson, & McGrath, 2004), have access to more resources (Kozlowski & Bell, 2003), take decisions and solve problems (Cohen & Bailey, 1997; Fisher & Ashkanasy, 2000), and achieve high levels of performance (Salanova, Llorens, Cifre, Martínez, & Schaufeli, 2003). Based on substantial empirical evidence, researchers have determined that through several affective linkage mechanisms (e.g., emotional contagion, comparison, empathy; Elfenbein, 2014), affect not only occurs at the individual level, but also at the group level.

In fact, since Jennifer M. George conducted the first research in 1990 to analyse the positive affective experiences in work teams, a large number of investigations have been carried out (e.g., Barsade & Knight, 2015) and a large number of terms (e.g., group affect, affective climate, team mood; Menges & Kilduff, 2015) have been developed in order to understand this group phenomenon.

According to George (1990), group affect refers to homogeneous affective reactions among group members. Later, this definition was completed, describing it as affective convergence or the affective composition of the group members (Barsade & Gibson, 1998), resulting from people feeling similar levels of individual emotions when working together (Barsade & Knight, 2015).

[2] In this study, we make no distinction between groups and teams, using the two terms interchangeably.

Specifically, interest in the positive side of group affect (i.e., group positive affect) has produced considerable growth in the research, making it necessary to constantly review the state-of-the-art in order to establish the foundations for the future research agenda. To date, multiple reviews on the topic have been conducted (Ashkanasy, & Humphrey, 2011; Collins, Lawrence, Troth, & Jordan, 2013; Barsade, & Gibson, 2012; Barsade, & Knight, 2015; Knight, & Eisenkraft, 2015; Menges, & Kilduff, 2015; Spoor, & Kelly, 2004; Van Kleef, & Fischer, 2015). However, the aforementioned reviews present two limitations that we would like to overcome: 1) Most of the reviews are based on narrative review. As Pae (2015) noted, narrative reviews present several limitations, such as not predefining the protocol during the search stage or including studies for review based on authors' hunches and research knowledge. Thus, we propose to conduct an integrative review considered as "*the broadest type of research review methods allowing for the simultaneous inclusion of experimental and non-experimental research in order to more fully understand a phenomenon of concern*". (Whittemore & Knafl, 2005, pp. 547). 2) Focus. Overcoming the first aforementioned limitation, Knight and Eisenkraft (2015) performed the first meta-analysis exploring the mean effect of group positive affect on social integration and group performance. However, Knight and Eisenkraft (2015) only focused on two specific outcomes (i.e., social integration, group performance), leaving out many antecedents and outcomes that would make it possible to obtain a comprehensive view of group positive affect. Moreover, with the exception of Ashkanasy and Humphrey (2011), previous reviews have shown a lack of attention to the relationship between group positive affect (group level) and variables of different levels (i.e., individual, organizational). Thus, we approach the study of group positive affect from a multilevel

perspective that analyses every part of the process (i.e., antecedents, outcomes, mediators, moderators).

Briefly, in the present integrative review about the concept of group positive affect, empirical sources were included to understand the antecedents and outcomes of group positive affect, as well as related methodological aspects. Therefore, the objectives of this integrative review were: 1) to critically review empirical research about positive affective experiences at the group level of analysis; and 2) to synthesise the findings in order to advance the understanding of this construct.

Method

According to Souza, Silva, and Carvalho (2010), an integrative review is a methodological approach to reviews that could include different types of studies (e.g., non-experimental, experimental) in order to obtain a comprehensive view of the topic. Moreover, an integrative review guarantees a rigorous process of identification, analysis, and synthesis of the results, without the need to focus on one specific question. Taking these benefits into account, an integrative review was implemented in five stages: research question identification, literature search, search outcome, data synthesis, and presentation of results (Whittemore, & Knafl, 2005).

Literature search

First, an electronic search was carried out of literature published prior to March 2019 using the following databases: PsycNET and Proquest Central. In order to identify relevant studies, through the recent reviews, we checked the different terms referring to positive affective experiences at the group level. A keyword search was conducted with

a set of keywords: (group OR team OR collective OR workgroup) AND (affective climate OR affect OR mood OR emotion OR trait OR tone) AND positive.

Second, in parallel, a manual search was performed by tracking down the references cited by relevant sources.

Five inclusion criteria were considered: 1) The study had to be empirical; 2) The study had to be published in English or Spanish in a scientific peer-review journal. Conferences meetings, book chapters and doctoral dissertation were excluded in order to avoid grey literature; 3) Group positive affect had to be operationalized as positive affect that emerges among group members, not as an affective linkage mechanism (e.g., emotional contagion) or similar affective construct (e.g., affective presence); 4) Group positive affect had to be evaluated in a work context such as a laboratory (e.g., organizational simulation, task decision) or field (e.g., organization); 5) Agreement (e.g., AD, LeBreton & Senter, 2008) or reliability (e.g., ICC1, ICC2, Bliese, 2000) indices had to be calculated in order to statistically justify the aggregation of group positive affect at the group level of analysis. According to (Bliese, 2000), for theoretical and practical reasons, aggregated constructs require evaluating these indices to provide construct validity in order to identify emerging phenomena.

Search outcome

All the articles that contained the keywords were incorporated, as well as articles found through relevant sources. Using the inclusion criteria, the articles were selected. First, the title and abstract were reviewed, and then the full text.

During the process, the Knight and Eisenkraft meta-analysis (2015) was detected in the database. The articles considered in the aforementioned meta-analysis were reviewed in order to determine whether they could be included in the present

review. Studies considered grey literature (e.g., doctoral dissertations, chapters) were searched again to find out whether the authors had published similar results on the topic.

One issue was detected during the review process of the articles. Although some reviewed articles did not meet the third inclusion criterion (Hmieleski, Cole, & Baron, 2011; Rego, Reis Júnior, Pina e Cunha, Stallbaum, & Neves, 2014), they were included in the database because the authors made arguments in the article that this calculation was not necessary. Figure 1 clarifies the literature search and article selection process.

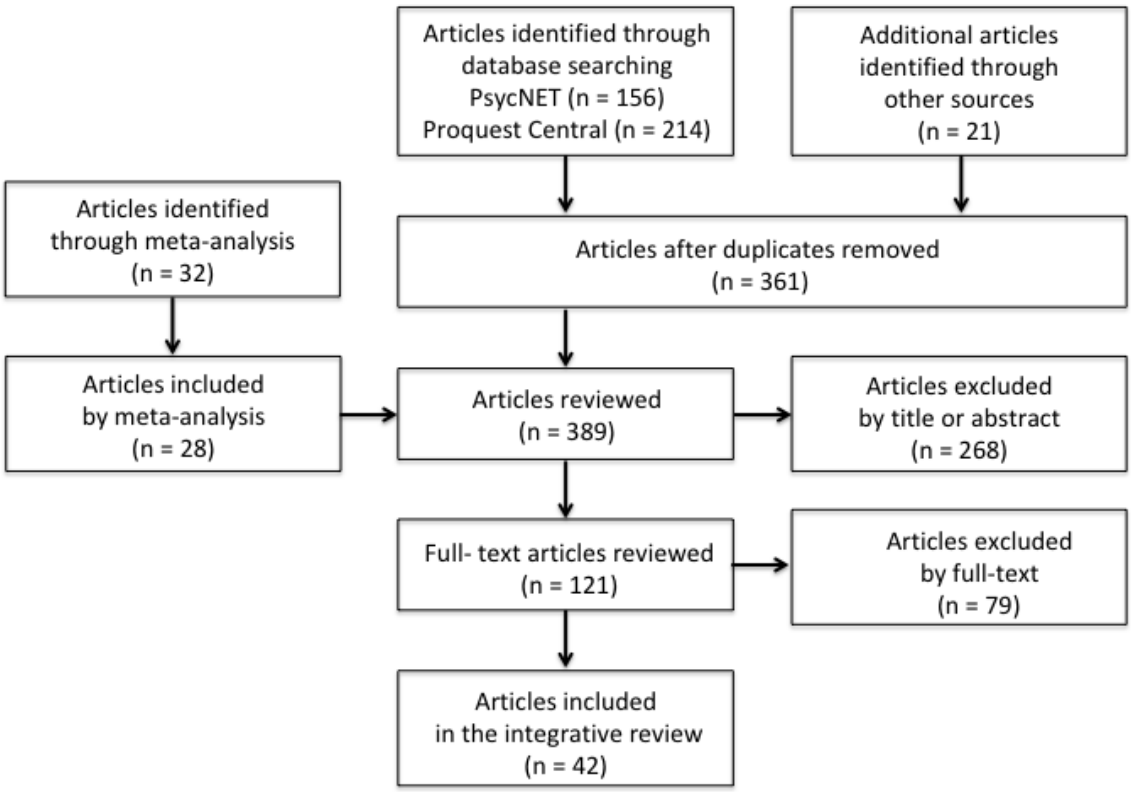

Figure 1. Flow diagram clarifying the literature search and selection process.

Data synthesis

First, following Cooper´s recommendations (1998), we analysed methodological characteristics such as the group sample, Cronbach's alpha, and response rate, in order to evaluate the quality of the research. In addition, in accordance with multilevel theory,

we analysed: 1) Referent-Shift Consensus (Chan, 1998), meaning that there is a shift in the referent (i.e., "My team feels…), as opposed to Direct Consensus (i.e., "I feel…."); 2) Fuzzy composition processes (Bliese, 2000) to statistically demonstrate agreement and reliability. Other methodological details considered are shown in Table 1.

Second, Table 2 was developed to summarise the information from the articles (e.g., instrument, variables evaluated). As a result of the synthesis of the selected literature, five major themes emerged: operationalization, antecedents, outcomes, mediators, and pitfalls of group positive affect.

Results

Methodological characteristics

We used Mendeley to store, organize, and read the 43 quantitative studies analysed (42 articles were accepted, but 43 studies were analysed because one article was composed of two studies). The methodological characteristics of all the articles examined are displayed in Table 1. The data show that the number of groups ranged between 19 and 179. The instruments used to measure group positive affect showed Cronbach's alpha values between .70 and .96. The study designs were primarily field studies (32 studies), whereas 11 were carried out in a laboratory; 28 studies were cross-sectional, and 15 were longitudinal. Regarding the referent in the scale, 13 studies used Referent Shift Consensus and 20 used Direct Consensus. In order to evaluate agreement, the Rwg index was the most commonly used (34 studies, values of between .49 and .95), followed by the AD index (5 studies, values of between .10 and .67), whereas the reliability values ranged between .08 and .97 for ICC1, and between .19 and .86 for ICC2. Participant response rates ranged between 11.8% and 98%. With regard to cross-level relations, most of the studies analysed (36 studied) focused on

establishing relationships at the group level. Only 7 studies established cross-level relationships between different levels of analysis: 6 group-individual level and 1 group-organizational level.

Table 1.

Methodological characteristics of the included studies.

	Source	n (Groups)	Cronbach α Instrument	Design	Composition model	Agreement	Reliability
1	Bashshur et al. (2011)	152-179	.96	Field. LG	DC	AD = .54	ICC1 = .23, ICC2 = .60
2	Bramesfeld and Gasper (2008)	30	.94	Lab. CS	DC	Rwg = .75	-
3	Chi, & Huang (2014)	61	.93	Field. CS	DC	Rwg = .95	ICC1 = .21, ICC2 = .58
4	Chi et al. (2011)	85	.89	Field. CS	DC	Rwg = .91	ICC1 = .23
5	Collins et al. (2015)	Study 1: 61	.90 - .91	Lab. LG	DC	Rwg = .78	ICC1 = .12, ICC2 = .31
		Study 2: 47	.89 - .91	Lab. LG	DC	Rwg = .88	ICC1 = .23, ICC2 = .44
6	Dimotakis et al. (2012)	21	.94	Lab. LG	DC	Rwg = .61 - .72	ICC1 = .20, ICC2 = .84
7	Gamero et al. (2008)	156	.95	Field. LG	DC	AD = .55 - .58	ICC1 = .19, ICC2 = .51 -.52
8	George (1990)	26	.80	Field. LG	DC	-	ICC1 = .87
9	George (1995)	41	.91	Field. CS	DC	-	ICC1 = .88
10	Gil et al. (2015)	110	.92	Field. CS	RSC	-	ICC1 = .13
11	González-Romá and Gamero (2012)	59	.92	Field. LG	DC	AD = .47	-
12	Hentschel et al. (2013)	38	.85	Field. CS	RSC	Rwg = .92	ICC1 = .44, ICC2 = .86
13	Hmieleski et al. (2011)	179	.91	Field. LG	RSC	Rwg = .81 - .72	-
14	Kim et al. (2016)	50	.86	Field. CS	RSC	Rwg = .84	ICC1 = .12, ICC2 = .44

15	Kim and Shin (2015)	97	.84	Field. CS	DC	Rwg = .85	ICC1 = .15, ICC2 = .47
16	Kim et al. (2013)	42	.87	Field. CS	DC	Rwg = .93	ICC1 = .19, ICC2 = .63
17	Klep et al. (2011)	70	.93	Lab. CS	DC	Rwg = .86	ICC1 = .54, ICC3 = .97
18	Knight (2015)	33	-	Field. LG	RSC	Rwg = .90 - .92	ICC1 = .08 - .09, ICC2 = .43 - .47
19	Lee et al. (2016)	100	.83	Field. LG	RSC	Rwg = .91	ICC1 = .32, ICC2 = .69
20	Levecque et al. (2014)	97	.81	Field. CS	DC	AD = .67, Rwg = .84	ICC1 = .24, ICC2 = .70
21	Lin et al. (2014)	47	.88	Field. CS	DC	Rwg = .95	ICC1 = .25, ICC2 = .59
22	Mason (2006)	24	.83	Field. CS	DC	Rwg = .79	ICC1 = .09
23	Mason and Griffin (2003)	97	.88 - .89	Field. LG	RSC	Rwg = .85	ICC1 = .21 - .22, ICC2 = .59 - .69
24	Mason and Griffin (2005)	55 - 66	-	Field .CS	RSC	Rwg = .63	
25	Meneghel et al. (2014)	216	-	Field. CS	RSC	AD = .10 - .14	ICC1 = .72 - .97
26	Paulsen et al. (2016)	34	.75 - .92	Lab. LG	DC	Rwg = .78	-
27	Rego et al. (2014)	106	.71	Field. CS	RSC	-	-
28	Salanova et al. (2011)	19	T1: .70 - .85	Lab. LG	RSC	Rwg = .84 - .89	-
29	Sánchez-Cardona et al. (2018)	130	.89	Field. CS	RSC	Rwg = .75	ICC1 = .33, ICC2 = .68
30	Seong and Choi (2014)	96	.96	Field. CS	RSC	Rwg = .94	ICC1 = .11, ICC2 = .53
31	Shin (2014)	98	.88	Field. CS	DC	Rwg = .84	ICC1 = .19, ICC2 = .58
32	Sy and Choi (2013)	102	-	Lab. LG	DC	Rwg = .49 - .84	ICC1 = .29 - .55, ICC2 = .65 - .88

33	Shin et al. (2019)	116	.95	Field. CS	DC	Rwg = .94	ICC1 = .11, ICC2 = .45
34	Tang and Naumann (2016)	47		Field. CS	DC	Rwg = .90	-
35	Tangue et al. (2010)	71	.71	Field. CS	DC	Rwg = .89	ICC1 = .09, ICC2 = .19
36	Teng and Luo (2014)	123	.74	Field. CS	DC	Rwg = .71 - .99	
37	Tran et al. (2012)	20	-	Lab. LG	DC	IRR = .95 - .98	ICC = .12 - .46
38	Tsai et al. (2011)	68	.88	Field. CS	DC	Rwg = .92 - .95	ICC1 = .13, ICC2 = .45
39	Tu (2009)	106	.92	Field. CS	DC	Rwg = .92	ICC1 = .33, ICC2 = .78
40	Van Knippenberg et al. (2010)	178	.89	Lab. CS	DC	Awg = .19	-
41	Volmer (2012)	21	.88	Lab. CS	DC	Rwg = .72	-
42	Zhang et al. (2017)	74	.88	Field. CS	DC	Rwg = .88	ICC1 = .26, ICC2 = .68

Note: LG (Longitudinal study); CS (Cross-sectional study); DC (Direct Consensus); RS (Referent Shift)

Operationalization of group positive affect

Of the studies included in the integrative review, we noted that, in all, twenty-two different terms were used to refer to positive affective experiences in groups. However, the term used the most was positive group affective tone (8 studied), followed by positive affective tone (7 studies), group positive affect (3 studies), and positive affect (3 studies).

With regard to measurement instruments, the Positive and Negative Affect Schedule (PANAS, Watson, Clark, & Tellegen, 1988) was used the most (18 studies); 4 studies used the Job Affect Scale (JAS, Brief, Burke, George, Robinson, & Webster, 1988); 4 studies used scales based on the Affective Circumplex Model (e.g., Larsen & Diener, 1992); 3 studies used HERO (Salanova, Llorens, Cifre, & Martínez, 2012); 3 studies used the Affective Well-being Scale (Segura & González-Romá, 2003); 2 studies used the Job-Related Affective Well-Being Scale (JAWS, Van Katwyk, Fox, Spector, & Kelloway, 2000); and 6 used other scales (e.g., self-constructed, unavailable data).

Table 2.

Summary of studies included in the review.

	Source	Term	Instrument	Sample	Independent Variable	Moderator Variable	Mediator Variable	Dependent Variable
1	Bashshur et al. (2011)	Team positive affect	Affective Well-being Scale (Segura and González-Romá, 2003)	Employees in different branches of three savings banks in the same geographical region	Team climate, Manager perception of team climate			Group positive affect
2	Bramesfeld and Gasper (2008)	Happy mood	-	Students from a course	Mood manipulation (e.g., Group positive affect), Evidence distribution		Focus on the evidence	Group performance
3	Chi and Huang (2014)	Positive group affective tone	Positive and Negative Affect Schedule (Watson, et al.,1988)	Research and development (R&D) teams from high-technology firms	Transformational leadership		Team learning goal orientation, Team avoiding goal orientation, Group positive affect, Negative group affective tone.	Team performance
4	Chi et al. (2011)	Positive group affective tone	Positive and Negative Affect Schedule (Watson, et al.,1988)	Sales teams from five insurance firms	Leader positive moods		Group positive affect, Transformational Leadership, Team goal commitment, Team satisfaction, Team helping behaviours.	Team performance
5	Collins et al. (2015)	Positive affective tone (Study 1)	Positive and Negative Affect Schedule (Watson, et al., 1988)	University students completing a business communication course	Group positive affect	Management of others' emotions.		Team improvement; Team task

		Positive affective tone (Study 2)	Positive and Negative Affect Schedule (Watson, et al., 1988)	University students from business course	Group positive affect	Management of others' emotions		Team performance
6	Dimotakis et al. (2012)	Positive affect	Positive and Negative Affect Schedule (Watson, et al., 1988)	University students	Regulatory focus, Team structure, Task characteristics	Team structure	Helping behaviours, Group positive affect	Task performance, Task satisfaction
7	Gamero et al. (2008)	Affective climate. Enthusiasm climate	Affective Well-being Scale (Segura and González-Romá, 2003)	Employees from saving banks	Task Conflict T1, Group positive affect T1		Relationship conflict T2	Group positive affect T2
8	George (1990)	Positive affective tone of the work group	Job Affect Scale (Brief et al., 1988)	salespeople working for a large department store	Negative affective tone, Group positive affect, Commission			Prosocial Behaviour, Absence
9	George (1995)	Group positive affective tone	Modified Positive and Negative Affect Schedule (Watson, et al., 1988)	Salespeople from a retail organization	Leader positive mood, Group positive affect			Group performance
10	Gil et al. (2015)	Positive affect in work teams	HERO (Salanova et al. 2012)	Employees from service organizations	Work team size, Economic sector, Gender, Type of contract, Organizational tenure			Group positive affect

11	González-Romá and Gamero (2012)	Positive team mood	Affective Well-being Scale (Segura and González-Romá, 2003)	Branches from a saving bank	Support climate		Group positive affect	Team members' perceived team performance, Managers' team effectiveness ratings
12	Hentschel et al. (2013)	Positive team affective tone	Job-Related Affective Well-Being Scale (Van et al., 2000)	Different sectors (e.g., manufacturing and technological, administration, medical)	Perceived diversity	Diversity beliefs	Group positive affect, Negative team affective tone	Team identification, Relationship conflict
13	Hmieleski et al. (2011)	Positive team affective tone	Job-Related Affective Well-Being Scale (Van et al., 2000)	CEOs of top management teams from new firms	Shared authentic leadership		Group positive affect	Firm performance
14	Kim et al. (2016)	Positive affective climate	Affective Circumplex (Haslam, 1995)	Employees with different job position	Positive trait affect, Negative trait affect, Group positive affect, Group reflexivity	Group positive affect, Group reflexivity		Employee creativity
15	Kim and Shin (2015)	Group positive affect	Positive and Negative Affect Schedule (Watson, et al., 1988)	Employee from different size and sector organizations	Cooperative group norms, Group positive affect		Collective efficacy	Team creativity
16	Kim et al. (2013)	Group trait positive affect	Positive and Negative Affect Schedule (Watson, et al.,1988)	Office workers across different industries (telemarketing, financial, pharmaceutical, and media industries)	Individual trait positive affect	Group positive affect, Group positive affect diversity		Commitment, Job satisfaction, OCB
17	Klep et al. (2011)	Positive mood	self-constructed	Dutch University students	Manipulation work group mood (e.g., Group positive affect), Interactive affective sharing			Work group performance, Group belongingness, Group information sharing

18	Knight (2015)	Team positive mood	Circumplex model of affect (Larsen and Diener, 1992)	Members from a military academy	Group positive affect, Time	Team exploratory search		Team exploratory search, Team performance
19	Lee et al. (2016)	Group positive affect	Positive and Negative Affect Schedule (Watson, et al., 1988)	Employees in a manufacturing plant from China	Past group performance, Group Vicarious learning, Group social persuasion, Group positive affect	Group Trust	Group efficacy	Group Performance
20	Levecque et al. (2014)	Affective team climate	-	Workers in the Volvo Car plant in Ghent, Belgium	Group positive affect, Job demands, Perceived team climate, Job control, Social support	Group positive affect, Perceived team climate, Job control, Social support		Psychological distress
21	Lin et al. (2014)	Positive group affect	Positive and Negative Affect Schedule (Watson, et al., 1988)	MBA alumni for the most recent three years from a local university	Group positive affect, Negative group affect		Group efficacy	Group identification
22	Mason (2006)	Positive affect	Job Affect Scale (Brief, et al., 1988)	This sample was diverse and there was wide range in the type of tasks performed by each work group, ranging from patient care (in a hospital) to client service (in a call centre) to replenishment of stock (on a factory floor) to management (within a fast-food chain).	Group time, Task variety, Outcome interdependence, Heterogeneity in backgrounds, Gender Diversity, Age Diversity, Communication quality, Cohesion, Task interdependence, Frequency of meetings			Group positive affect

23	Mason and Griffin (2003)	Positive affective tone	Queensland Public Agency Staff Survey (Hart, et al., 1996)	Workers for an Australian state government agency	Group positive affect			Group absenteeism
24	Mason and Griffin (2005)	Positive affective tone	Job Affect Scale (Brief, et al., 1988)	Employees from a variety of different industries operating within both the public and private sector, and the functions of the work groups varied widely, from management to customer service to the replenishment of stock on a factory floor	Group task satisfaction, Aggregated individual job satisfaction, Group positive affect, Negative affective tone			Civic helping (group and supervisor), Performance (supervisor), Sportsmanship (group and supervisor), Absenteeism norms (group and supervisor)
25	Meneghel et al. (2014)	Collective positive emotions	HERO (Salanova et al. 2012)	Employees from service, industry and construction sector in Spain	Group positive affect		Team resilience	Team in role performance, Team extra-role performance
26	Paulsen et al. (2016)	Positive group affective tone	Short form of Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988).	Students from a software engineering course at a German university	Group positive affect, Negative group affective tone, Project phase	Project phase		Team performance (experts), Team performance (self-rated)
27	Rego et al. (2014)	Positive affective tone	Positive affective tone (Turban, et al., 2009)	Brazilian retail organization	Group positive affect	Negative affective tone	Store creativity	Store performance

28	Salanova et al. (2011)	Collective positive affect	Enthusiasm-depression scale (Warr, 1990), Face scale (Kunin, 1955)	University students	Efficacy beliefs		Group positive affect	Engagement
29	Sánchez-Cardona et al. (2018)	Team positive affect	HERO (Salanova et al. 2012)	Employee from different size and sector organizations	Leader intellectual stimulation		Group positive affect	Team learning
30	Seong and Choi (2014)	Group positive affect	Circumplex Model of Affect. (Posner, et al. 2005)	Korean company in the defence industry	Leader positive affect		Group positive affect, Group-level goal fit, Group-level ability fit, Relationship conflict, Task conflict	Group performance
31	Shin (2014)	Positive group affective tone	Positive and Negative Affect Schedule (Watson, et al., 1988)	Teams varied in functional areas (e.g. planning and strategy, sales, human resource management and development, research and development, finance and accounting, and marketing) from different organizations	Group positive affect, Negative group affective tone		Team reflexivity, Team promotion focus, Team prevention focus	Team creativity
32	Sy and Choi (2013)	Positive group mood convergence	Job Affect Scale (Brief, et al., 1988)	Students from management courses	Group-Leader affective diversity, Member affective diversity, Mood induction in leaders	Interpersonal attraction toward leader, Interpersonal attraction toward group, Emotional contagion susceptibility	Group positive affect, Negative group mood convergence	Group positive affect, Negative group mood convergence

33	Shin et al. (2019)	Positive group affective tone	Positive and Negative Affect Schedule (Watson, et al., 1988)	Full-time employees from 17 companies in South Korea, representing diverse firm sizes and industries	Group positive affect	Team leader transformational leadership	Team reflexivity	Team creativity performance, Team change organizational citizenship behaviour
34	Tang and Naumann (2016)	Team positive mood	Positive and Negative Affect Schedule (Watson, et al., 1988)	Employees in research institutes in China (basic research, high technology R&D, other fields)	Work value diversity	Group positive affect	Knowledge sharing	Team creativity
35	Tangue et al. (2010)	Positive group affective tone	Circumplex model of affect (Larsen and Diener, 1992)	Employees from commercially oriented service organizations, such as shops, bars, restaurants and physiotherapists' offices,	Group positive affect, Negative group affective tone	Group identification.		Willingness to engage in OCB, Perceived team performance
36	Teng and Luo (2014)	Group affective tone	Positive and Negative Affect Schedule (Watson, et al., 1988)	College students studying hospitality and tourism management.	Perceived social loafing, Perceived social interdependence		Group positive affect	Group productivity, Group final grades
37	Tran et al. (2012)	Achievement emotions, Approach emotions	Emotion Wheel (Scherer, 2005)	Managers taking part in executive development seminars	Group positive affect, Positive ratio			Alternative generation, Alternative evaluation
38	Tsai et al. (2011)	Positive Group Affective Tone	Positive and Negative Affect Schedule (Watson, et al., 1988)	R&D teams from high-technology firms	Group positive affect	Negative Group Affective Tone, Team trust		Team creativity

39	Tu (2009)	Positive affective tone	Positive and Negative Affect Schedule (Watson, et al., 1988)	New product development teams of high-technology firms from the Taiwan Stock Exchange	Group positive affect, Negative affective tone	Organizational support, Organizational control		Team creativity
40	Van Knippenberg et al. (2010)	Positive mood	-	University students	Manipulation mood (e.g., Group positive affect)	Trait negative affect	Information elaboration	Decision quality, Information elaboration
41	Volmer (2012)	Group affective tone	UWIST mood adjective checklist (Matthews, et al., 1990)	University students	Manipulation of Leader´s mood		Group positive affect	Team Performance, Team potency, Team goal commitment, Individual Mood
42	Zhang et al. (2017)	Positive group affective tone	Positive and Negative Affect Schedule (Watson, et al., 1988)	Research and development groups employed by high-technology companies located in China	Leader´s psychological capital, Group positive affect	Leader´s psychological capital	Core self-evaluation	Work engagement

Antecedents of group positive affect

Five studies reported antecedents of group positive affect. Although the antecedents studied were varied, we have classified them in two categories.

Group processes. Congruent with previous studies at the individual level about how disagreement on task issues is associated with relationship conflicts and employee wellbeing, Gamero, González-Romá, and Peiró (2008) proposed a homologous model showing that relationship conflict (T1) fully mediates the relationship between task conflict (T2) and group positive affect (T2). In other words, through a process of biased information, criticism, and debate during tasks, groups could unknowingly unleash relationship conflict and reduce the chances of working in a positive and enthusiastic environment. With regard to biases in companies, Bashshur, Hernández, and González-Romá (2011) addressed the importance of organizational support climate agreement through two steps: 1) Team climate for organizational support has a positive impact on group positive affect over time; 2) Differences in team and manager perceptions of team climate produce detrimental effects on group positive affect, whereas their agreement boosts group positive affect when both the team and manager perceive high levels of team climate. Moreover, Mason (2006) suggested a series of predictors of group positive affect by means of semi partial correlations. Results showed that the frequency of team meetings was most positively related to group positive affect, followed by the time spent performing tasks for which the team is responsible.

Contextual factors. Based on Social identity theory (Tajfel & Turner, 1986), Gil, Llorens and Torrente (2015) focused on examining the shared characteristics that are related to shared positive affect among group members. Controlling for team size and economic sector, a similar type of contract and organizational tenure were positively related to group positive affect. That is, in order for group positive affect to emerge,

members should perceive themselves as equals and have a greater sense of affiliation with the group. On the other hand, Sy and Choi (2013) developed and tested a theoretical framework to explain the process through which personality diversity (i.e., leader-group as GLAD, member-member as MAD) produces modifications in group positive affect over time, as well as the social variables (i.e., interpersonal attraction, emotional contagion susceptibility) that participate in this process. Findings revealed that at the beginning (second data collection), MAD, GLAD, and leader attraction were significantly related to group positive affect, MAD and GLAD negatively and leader attraction positively. In fact, the effect of GLAD was moderated by both emotional contagion susceptibility and leader attraction. Thus, when high levels of emotional contagion susceptibility are present, the levels of diversity between the leader and the group (i.e., high or low diversity) imply greater change in group positive affect. In other words, with high emotional contagion susceptibility, high leader-group diversity implies low levels of group positive affect. However, with high emotional contagion susceptibility, low leader-group diversity implies high levels of group positive affect. With regard to leader attraction, when groups present high levels of interpersonal attraction to the leader, they display minimal differences in group positive affect, regardless of the levels of diversity between the leader and the group. In the third data collection, data showed that only MAD continued to be negative and significant; that is, the effect of leader diversity was lost in the long term. Specifically, the effect of MAD was moderated by the group member attraction. When groups present high levels of members' interpersonal attraction, the levels of diversity among the group members completely determine the group positive affect, so that high diversity means lower levels of group positive affect, and, on the contrary, less diversity means higher levels of group positive affect. Briefly, in all circumstances, personality diversity hinders the

development of group positive affect.

Outcomes of group positive affect

Twenty studies reported outcomes of group positive affect. Although the outcomes studied were varied, we have classified them in six categories.

Performance. Several authors used a measure of objective performance (e.g., solution to a problem, a sales rate), reducing common method variance and adding robustness to the findings. For instance, Bramesfeld and Gasper (2008) carried out a murder mystery task in an experimental study. In this study, the performance measure was related to a combination of suspects' guilt ratings and the number of correct suspects. Results suggested that group positive affect has an indirect effect on group performance through the focus on the critical evidence. However, this relationship was only significant when the critical evidence was unique. Lee, Stajkovic, and Sergent (2016) observed that group efficacy works as a full mediator between group positive affect and group performance (i.e., amount of metal processed each month by each group). However, group positive affect was not related to group efficacy unless low levels of group trust moderated the relationship. Another example of full mediation was found in Rego et al. (2014). Rego et al. (2014) tested two proposals, finding that creativity fully mediated the relationship between group positive affect and performance (i.e., sales achievement in the current semester, sales achievement in the subsequent semester). Moreover, negative affective tone moderates the relationship between group positive affect and performance. This relationship was found to be more intense when groups felt high levels of negative affective tone.

The aforementioned authors based their studies on different mediator mechanisms in order to explain the relationship between group positive affect and group

performance. However, Knight (2015) suggested a direct relation, instead of indirect. Specifically, considering team life (i.e., early, midpoint, late), the data showed that group positive affect at the midpoint of team life was positively related to team performance (i.e., results in a competition).

With regard to group performance evaluated by a supervisor, we found four articles that reached the same conclusion: group positive affect has a positive and significant effect on group performance (i.e., George, 1995; Mason & Griffin, 2005; Meneghel, Salanova, & Martínez, 2014; Paulsen, Klonek, Schneider & Kauffeld (2016;). However, Paulsen, et al. (2016) also considered that the project phase (i.e., first, second) could influence the effect of group positive affect on team performance. The interaction analysis confirmed this influence, but it also showed that: 1) the association between group positive affect and team performance was stronger in the second phase of the project than in the first phase; 2) groups that experienced high levels of positive affect displayed the same level of performance, regardless of the project phase.

On the other hand, unlike the aforementioned authors, Meneghel, et al. (2014) proposed that the relationship is not direct, but rather mediated by the effect of the variables. Specifically, based on Broaden and Build Theory (Fredrickson, 1998, 2001), Meneghel, et al. (2014) suggested team resilience as an underlying mechanism connecting group positive affect to team performance. Thus, groups that experience positive affect grow with adversity, which allows them to complete both the required tasks and those that are not required formally by the job.

Creativity. Shin and colleagues (Kim & Shin, 2015; Shin, 2014; Shin, Kim, & Lee, 2019) systematically confirmed that group positive affect would promote a collective reflection about the team´s objectives and motivate group members to actively pursue them. According to the authors, these group behaviours (i.e., team

reflexivity, team promotion focus) operate as a mediating process that allows groups to achieve new solutions, but also change what does not work (i.e., OCB). More recently, Shin et al. (2019) suggested that transformational leadership behaviours moderate the effect of group positive affect. In fact, only when leaders exhibited high levels of transformational leadership was the indirect effect of group positive affect on team creativity via team reflexivity significant. In addition, the best levels of team reflexivity were reached when high levels of group positive affect and transformational leadership were combined.

From a multilevel perspective, group positive affect also revealed a positive association with individual creativity. Specifically, cross-level group positive affect moderates the relationship between positive affect and creativity at the individual level. Thus, when high levels of group positive affect fit with high levels of individual positive affect, employees develop greater creativity (Kim, Choi, & Lee, 2016). Considered as a moderator variable of group diversity (e.g., motivations, attitudes, professional background), high levels of group positive affect reduce the negative effects of high diversity on knowledge sharing and team creativity (Tang, & Naumann, 2016). Finally, Tu (2009) proposed that contextual factors (i.e., organizational support, organizational control) moderate the relationship between group positive affect and team creativity. Although correlations showed a positive relationship between group positive affect, team creativity, and organizational support, and group positive affect correlated negatively with organizational control, the findings do not support the initial proposal.

Absence. The first studies on group positive affect began with George´s research (1990) on absenteeism and prosocial behaviours. With a sample of 26 groups, regression analyses only showed that group positive affect was negatively related to

absenteeism ($p < .10$). Several years later, Mason and Griffin (2003) resumed the investigation, proposing the effect of group positive affect on group absence behaviour over a one-year period. After performing several statistical analyses, the results indicated that group positive affect was negatively related to the level of group absenteeism. Moreover, the explanatory power of group positive affect improved over time. After one year, the explained between-group variance increased from 3% to 11%.

Group efficacy. Based on several theories (e.g., social cognitive, broaden-and-build), different authors have provided conclusive results about the positive relationship between group positive affect and group efficacy. Specifically, group positive affect has been shown to be an antecedent of group efficacy (Kim & Shin, 2015; Lin, Lin, Huang, and Wang, 2014), but also, as Salanova, Llorens and Schaufeli (2011) noted in a 3-wave study, the influence between these variables could be bidirectional. In other words, happy groups would develop confidence in their skills and success during the task, which would promote new positive affect among group members. Therefore, results suggest a positive spiral model. In spite of previous studies, Lee et al. (2016) showed that group trust moderates the relationship between group positive affect and group efficacy. In fact, group positive affect was not related to group efficacy unless low levels of group trust moderated the relationship.

Other group outcomes. Tran, Paez, and Sanchez (2012) established that group positive affect could be divided into two types, achievement affect (e.g., joy, satisfaction) and approach affect (e.g., interest, hope). During a decision-making task, every type of positive affect would be positive or negative for a specific main process (i.e., generation of alternatives, evaluation of alternatives). Results showed that group positive affect, such as interest and hope, was positively related to generating alternatives. On the other hand, Lin, et al. (2014) tested group identification as an

outcome of group positive affect, revealing that sharing positive affect among group members allows members to feel like a whole.

Individual wellbeing. Belonging to a happy group may provide benefits not only for the group, but also for the members. This conclusion has been determined by several studies that verified the effect of group positive affect on individual wellbeing. For instance, group positive affect acts as a job resource that reinforces the individual's cognition about his/her self-worth and capabilities, as well as enhancing positive group relationship precursors of individual work engagement (Zhang, Zhang, & Qiu, 2017). Moreover, group positive affect could buffer individual psychological distress as the opposite of wellbeing. According to Levecque, Roose, Vanroelen, and Rossem (2014), it protects against the negative effects of high job demands, reducing psychological distress.

Group positive affect as mediator

Twelve studies reported how group positive affect worked as a mediator between several variables. We have classified the studies in three categories.

As mediator between leader and group outcomes. The first study that analysed the relationship between leadership and group outcomes was carried out by Hmieleski, Cole, and Baron (2011). The authors found that in a sample composed of top management teams, authentic leadership encourages group positive affect, which in turn, is positively related to organizational performance. Later, several studies confirmed this mediation. For example, Chi and Huang (2014) tested the effect of transformational leadership on team performance by proposing a double mediation; that is, a team learning goal orientation partially mediates the relationship between transformational leadership and group positive affect, but group positive affect also

fully mediates between a team learning goal orientation and team performance (i.e., Leadership→ Team learning (partial mediation) → Group positive affect (full mediation) →Team Performance). Although Sánchez-Cardona, Salanova and Llorens-Gumbau (2018) also confirmed the mediating effect of group positive affect, the authors suggested a new combination in which leadership first stimulates group positive affect, which, in turn, is positively related to team learning. As Sanchez-Cardona et al. (2018) noted, more studies should be conducted in order to reinforce the idea of gain spirals involving leadership, group positive affect, and group outcomes. However, research tested the effect of other types of leader characteristics, such as psychological capital.

On the other hand, using emotional contagion as an explanatory mechanism, several authors have examined the effect of the leader´s mood on group positive affect. For instance, Chi, Chung, and Tsai (2011) showed that the positive mood displayed by the leader has an effect on the group's positive affect. SEM results indicated that group positive affect works as a mediator variable between the leader´s positive mood and team outcomes (i.e., team goal commitment, team satisfaction, team helping behaviours). In addition, group positive affect had a significant indirect effect on team performance via these outcomes. Two subsequent studies continued with this question, adding new variables to the model. First, Volmer (2012) proposed three different outcomes (i.e., team performance, potency, goal commitment) and found that only group positive affect mediates between the leader´s mood and potency. The other two outcomes were not found to be related to group positive affect (i.e., team performance) or just showed a positive tendency (i.e., goal commitment). Second, Seong and Choi (2014) confirmed the same results about the positive and significant effect of leader positive mood on group positive affect. However, the authors also observed that those groups that experience positive affect also pursue common goals, have the skills to

complete the tasks, and in turn, achieve good group performance. Finally, extending the concept of emotional contagion, Zhang, et al. (2017) proposed that leaders could share much more than their emotions. In fact, the authors pointed out that the leader's psychological capital guides the development of group positive affect in their followers.

As a mediator between group processes and group outcomes. Support climate predicts group positive affect, and group positive affect predicts both measures of team performance (i.e., Team members' perceived team performance and the manager's ratings of team effectiveness) (González-Romá, & Gamero, 2012). However, the relationship between support climate at Time 1 and team members' perceived team performance at Time 3 was fully mediated by group positive affect at Time 2. On the other hand, Salanova, et al. (2011), through a 3-wave positive spiral model, replicated the same model at two different levels of analysis (i.e., individual, group), determining that group positive affect (i.e., enthusiasm, satisfaction, comfort) functions as a mediator variable between efficacy beliefs and engagement in a laboratory context.

As a mediator between contextual factors and group outcomes. The findings obtained by Dimotakis, Davison and Hollenbeck (2012) were threefold. First, team structure and regulatory task characteristics had significant negative effects on group positive affect. Second, results indicated that only groups in a divisional structure and focused on gains (i.e., regulatory focus based on promotion objectives) were associated with high levels of group positive affect. Other combinations showed the lowest levels of group positive affect. Third, authors found that the moderating effect of team structure (on the relationship between regulatory focus and task satisfaction and performance) is mediated by group positive affect. However, Hentschel, Shemla, Wegge, and Kearney (2013) also tested whether the interaction effect of perceived diversity and diversity beliefs had a significant influence on group positive affect. The

data supported only an indirect effect of perceived diversity on identification through group positive affect. Specifically, perceived diversity was negatively associated with group positive affect, but group positive affect was positively related to identification.

The last study included that verified the mediating effect of group positive affect was carried out by Teng and Luo (2014). In a sample of university students, they found that group positive affect had a positive and significant effect on group performance during an academic project based on group learning. However, this positive and significant effect was only confirmed for self-reported group performance, but not for objective performance measured by the professor. Moreover, the authors found that group positive affect partially mediated between social loafing and social interdependence. In fact, social loafing showed a negative effect on both group positive affect and self-reported performance, whereas social interdependence showed a positive effect on both group positive affect and self-reported performance.

Pitfalls of group positive affect

George and King (2007) openly approached what they called potential pitfalls of group positive affect, that is, those circumstances where positive experiences in groups produce harmful outcomes or do not produce the expected outcomes. The pitfalls detected in the ten research studies included in the integrative review will be discussed below in three categories, depending on the related factor.

Related to performance. Following Social identity theory, hierarchical regression analysis revealed that when members identify with their groups, the effect of group positive affect on team performance is strengthened (Tangue, Wisse, and Van der Flier, 2010). In fact, the effect of group positive affect alone on team performance was not significant. Thus, groups achieve the best performance when they feel high levels of

group positive affect and group identification, whereas low identification levels are related to low performance (compared to high identification), regardless of the levels of group positive affect experienced. The same results were obtained for willingness to engage in OCB as an outcome. Through a laboratory study, Klep, Wisse, and Van der Flier (2011) manipulated the group affect (i.e., positive, negative), as well as the affective interaction among group members, during two types of tasks (i.e., analytical, creative). The groups assigned to the positive affect condition obtained better performance on both tasks than the groups in the negative affect condition. However, the study found an exception to this rule. When groups in the positive affect condition also had the opportunity for affective interaction while performing an analytic task, they obtained the worst performance. On the analytical tasks, sharing affect kept the groups from obtaining good performance, whereas happy groups obtained the same performance on the creative task, regardless of whether they interacted and shared their affective states or not. Finally, Collins, Jordan, Lawrence and Troth (2015) developed two independent studies (i.e., study 1, study 2) using two different laboratory tasks (decision-making, creative) in order to test how group emotional skills (i.e., management of others' emotions) regulate the effect of group positive affect on group performance. Results indicated that the effect only makes sense when this regulation occurs. Specifically, the lowest levels of group performance occurred systematically when the group experienced high levels of positive affect but was not able to manage them, whereas the best group performance arose when the group had the ability to manage high levels of positive affect.

Related to group trust. In specific situations (i.e., high levels of trust and positive affect), groups could show a tendency to undermine deviant creative ideas (Tsai, Chi, Grandey, & Fung, 2011). Moreover, Tsai et al. (2011) tested a three-

interaction model showing that the best team creativity was achieved when groups developed high team trust, high negative group affect, and low levels of group positive affect. However, increases in group trust could make the relationship between group positive affect and group efficacy weaker, until returning to a non-significant relationship (Lee et al., 2016)

Related to other outcomes. Through an experimental study using a decision-making task, Van Knippenberg, Kooij-de Bode, and van Ginkel (2010) found that group positive affect could be less involved when discussing the task information and integrating it with the other members, leading them to achieve lower quality decisions than groups immersed in a negative or neutral affect. However, this would only occur when group members displayed low levels of trait negative affect. In line with these conclusions, happy groups showed lower levels of belongingness and information sharing than unhappy groups. Specifically, happy and unhappy groups showed better levels on both outcomes when members interacted and shared their affect (Klep et al., 2011). Finally, Knight (2015) related group positive affect to team exploratory search over time. Team exploratory search is understood as the intention of group members to pursue new and alternative ways to complete tasks. According to Knight's hypothesis, group positive affect is positively related to team exploratory search during early team life, but at the midpoint of team life, group positive affect decreases team exploratory search. In fact, depending on the levels of group positive affect (i.e., high, low), the results were different. Groups with low levels of positive affect achieved higher levels of team exploratory search between early team life and the midpoint of team life, but also less descent between the midpoint of team life and late team life.

So far, literature has shown that positive affect is positively related to other positive experiences, including engagement. However, Salanova et al. (2011) detected

that this phenomenon did not happen in the same way with all positive affect. In fact, comfort, understood as an emotion of high pleasure and low activation, showed a negative relationship with engagement. Finally, considering the effect of positive emotions from a different perspective, Kim, Shin, and Kim (2013) examined a cross-level model based on three-way interactions among group positive affect, group positive affect diversity, and individual positive affect on job satisfaction, organizational citizenship behaviour, and commitment at the individual level. Data showed two results: 1) Group positive affect is positively related to job satisfaction; 2) The aforementioned three-way interaction was only positive for commitment. Plotting the results, four patterns were found (i.e., high group positive affect, high diversity; low group positive affect, low diversity; high group positive affect, low diversity; low group positive affect, high diversity). As the authors noted, the relationship between individual positive affect and commitment was stronger when group positive affect was low and group positive affect diversity was high.

Discussion

The objective of the present integrative review was threefold: 1) analyse the literature in order to critically review empirical research about group positive affect; 2) synthesise the findings to more fully understand group positive affect; 3) make proposals for future studies to advance the group positive affect research. In an attempt to logically order the articles included in the review, we have classified the results into five categories: operationalization of group positive affect, antecedents of group positive affect, outcomes of group positive affect, group positive affect as mediator, and pitfalls of group positive affect.

Probably the most well-known and widely used instrument in the literature is the PANAS. However, Dienet et al. (2009) mentioned some limitations that may have

caused some authors to decide to use another instrument. For example, PANAS assesses adjectives that are not considered emotions (e.g., determined, strong), and it measures highly activated emotions more than lowly activated ones. On the other hand, studying group positive affect from different theoretical models has produced a lack of consensus in the terminology used. In fact, the review pointed out that the variety of terms used to refer to the same construct (i.e., group positive affect) is alarming, which leads to difficulties in synthesizing the advances made in the studied construct.

With regard to antecedents of group positive affect, a general vision suggests that the antecedents proposed so far do not seem to follow a systematic order based on clear and strong theory. Some variables have shown a positive (e.g., support climate, social interdependence) or negative (e.g., social loafing, team structure) relationship with group positive affect. On the other hand, the facilitating effect of the leader is especially remarkable. Leadership behaviours (e.g., transformational leadership) and the expression of positive affect and positive states (i.e., psychological capital) allow groups to develop higher levels of positive affect. In addition, results about the benefits of diversity and similarity in the groups are mixed. Apparently, similarity between group members (i.e., type of contract, organizational tenure) was positively related to group positive affect (Gil, et al., 2015), whereas diversity (i.e., personality) has a negative relationship with group positive affect (Sy & Choi, 2013). However, if other variables are considered in the model, the question is more complex. For example, absenteeism tended to be high in groups composed of a high proportion of males (Mason & Griffin, 2003), whereas group diversity seemed to have positive effects on group performance (Lee, et al, 2016), but not on creativity (Tang & Naumann, 2016).

The outcomes of group positive affect seem to be wide-ranging, but clear. Group positive affect is positively related to group wellbeing (i.e., satisfaction, work

engagement, group efficacy, potency), group processes (i.e. identification, team learning), group performance, creative performance, other outcomes (i.e., help behaviours, commitment, skills, pursue goals), and individual wellbeing. Furthermore, group positive affect showed a negative relationship with absence. Specifically, for researchers there has always been a growing interest in relating positive affect to performance. As far as we know, this relationship has commonly been called the happy-productive worker (Wright and Cropanzano 2007), and it has been analysed from multiple perspectives and areas (Kaplan, Bradley, Luchman, Haynes, 2009; Lyubomirsky, King, & Diener, 2005). Considering theories such as Broaden and Build Theory (Fredrickson, 1998, 2001), it is plausible to consider that high levels of positive affect do not automatically imply high levels of performance, but instead the mediating effect would cause this to occur. At the group level of analysis, Kelly and Spoor (2013) stated that few studies have addressed mechanisms that could explain the aforementioned relationship. Supporting the previous statement, the present review found that only ten studies linked group positive affect to group performance, proposing three different types of mechanisms: cognitive mechanisms (e.g., group efficacy), behavioural mechanisms (e.g., team resilience), and external mechanisms (e.g. phase project).

Finally, several authors have suggested different circumstances where the completely advantageous effects of group positive affect have been questioned. For example, group and individual outcomes (e.g. performance, creativity, quality decision, team exploratory search, individual commitment) could be reduced depending on whether the members identify with their group, or depending on emotional competences, interaction during the task, the moment in the team life, affective diversity, the type of task (i.e., creative, analytical), and negative affect (i.e., individual,

group). After an analysis of the pitfall research, and without undermining previous research, we have become aware that: 1) There are studies where the task performed by the groups was evaluated with a scale that did not capture the true value of the performance. For instance, a creative task should be measured using criteria for creative performance and not task performance; 2) The pitfalls focus on what happens when groups exhibit high levels of positive affect and low results, but we do not know what happens when positive affect is low and good results are obtained; 3) The circumstances in which group positive affect produces negative effects are quite varied and complex. However, it is necessary to establish which differences allow the groups to obtain good results.

Future research agenda

As a result of the present review, below we discuss seven topics that seem highly relevant for further progress in group positive affect research.

A multilevel approach of positive affect. Although groups and organizations are multilevel structures that require a multilevel approach (González-Romá, & Hernández, 2017), most previous studies on group positive affect have focused on analysing the construct at the group level of analysis, leaving out cross-level effects. A multilevel approach that simultaneously takes into consideration the different levels of positive affect in organizations (i.e., individual, group, organizational) would be essential to establish whether there are relationships between them, as well as possible effects and cross-level relationships with other variables.

More and more antecedents of group positive affect. It has been shown that the outcomes of group positive affect have been considered more relevant than their drivers. Thus, there is a lot of work required to determine what team resources, team demands,

and other processes and external factors influence the development of group positive affect. For instance, could the culture, values, mission, and vision of an organization shape group positive affect? What organizational, social, task, or structural team resources promote group positive affect? What organizational, social, task or structural team demands reduce group positive affect?

Diversity in the organizations. Due to current social changes, it is essential for organizations to manage diversity in their teams (Martínez, Salanova, & Llorens, 2017). However, taking into account the negative effects of diversity on group positive affect, organizations should evaluate what configuration would be best depending on its needs Thus, how can organizations manage diversity in a way that affects the development of group positive affect and several outcomes?

Happy-and-productive groups. The present review has shown the researchers' interest in relating group positive affect to several outcomes such as group performance. However, future studies should look more deeply into the underlying mechanisms that make the existence of happy and productive groups possible. Why is a happy group a productive group? What behaviours or resources do happy-productive groups have that allow them to correctly use positive affect and obtain excellent performance?

¿Happy-unproductive or unhappy-productive? Recently, Peiró, Kozusznik, Rodríguez-Molina, and Tordera (2019) noted that the relationship between positive affect and performance is more complex than the happy-productive thesis proposes. In fact, the authors found a relationship with four patterns. Assuming that groups are social systems with emergent properties (George & King, 2007), what are the conditions in which groups and teams could become happy but also unproductive? And unhappy but productive?

Affective dynamics. Considering the importance of time for groups and teams (Wright, 1997), it would be interesting to examine the changes over time in the relationship between group positive affect and the related variables (i.e., antecedents, outcome, mediators, moderators). With the exception of Salanova et al. (2011), we lack results about possible feedback between group positive affect and the variables related to it. For example, is there feedback between group positive affect and positive outcomes (e.g., group performance, group commitment), so that group positive affect enhances positive outcomes, which, in turn, develop group positive affect? Is there a moment when group positive affect does not influence teams, depending on their team life? Moreover, based on Broaden and Build Theory (Fredrickson, 1998, 2001), how long would it take for team resources to be generated by group positive affect?

Group positive interventions. Positive affect arises in a social environment via interactions with others (Vacharkulksemsuk, & Fredrickson (2013). However, although the knowledge about the beneficial effects of group positive affect on group and individual outcomes is growing, there is less information about the effectiveness of positive interventions at the group level of analysis. Thus, future research would benefit from a resolute focus on group positive interventions.

Limitations

There are a few limitations associated with this study.

First, we are aware that restricting the search to published scientific articles could lead to publication bias (Ausina, & Meca, 2015). However, despite the use of professional social networks (i.e., research gate) and scientific databases to obtain information, it is often difficult for researchers to access books or doctoral dissertations, which could undermine the present review if the reader could not access the sources

cited. In addition, articles published in journals confer confidence about their quality due to the peer review process. Thus, for these reasons, we consider it necessary to carry out a review every few years that integrates the new advances on the topic.

Second, as Menges and Kilduff (2015) noted, researchers have used a wide variety of terms to refer to positive affective experiences in groups, causing great difficulties in selecting key words during the search strategy. In order to minimize this difficulty, we based our search on recent reviews to choose the key words. In addition, a manual search was carried out that complements the limitations of searching through key words in titles and abstracts.

Finally, although several of the articles analysed mentioned group positive affect (e.g., Berdahl & Matorana, 2006; Kelly, & Spoor, 2007), they were excluded because the aggregation indices (i.e., agreement, reliability) were not performed. These analyses allow us to statistically assume that group positive affect is shared among group members. However, not including these articles might mean that the full scope of group positive affect was not reached.

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CHAPTER 3

Happy-Productive Groups: How Positive Affect links to Performance through Social Resources[3]

Abstract

The current study extends the Broaden & Build Theory to the collective (i.e., groups) level of analysis, focusing on the mediating role of group social resources (i.e., cohesion, coordination, teamwork, supportive team climate) between group positive affect (i.e., enthusiasm, optimism, satisfaction, comfort) and group performance (i.e., in- and extra- role performance, creative performance). To test our hypotheses, we conducted two studies using independent samples. Study 1 is a laboratory study with 449 participants nested in 112 small groups who performed an organizational simulation creative task. Study 2 is a field study that aggregated scores of 2,159 employees nested in 417 groups. In both the lab and field studies, structural equation modelling results revealed that group social resources fully mediate the relationship between group positive emotions and performance.

Keywords

Group Positive Affect, Group Social Resources, Group Performance, Happy-productive groups, In- and Extra- Role Performance, Creative Performance, Broaden & Build Theory.

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Introduction

Affect is the core of human beings' psychological life, and research on affect is extensive because it influences a variety of cognitive, social, and biological processes (Lewis, Haviland-Jones, & Barrett, 2010). Affect has been defined as an umbrella term for an extensive array of emotional experiences, including emotions and mood (Fernández-Abascal, 2009). In recent years, researchers and practitioners have begun to focus on positive aspects of individuals, such as positive affect, giving rise to the so-called "*affective revolution*" (Barsade, & Gibson, 2007).

In the organizational context, scholars have extensively reviewed the happy-productive worker thesis; that is, "happy" individual workers will perform better than "unhappy" ones (Wright, & Cropanzano 2007). However, numerous studies show that happiness (i.e., positive affect) not only occurs at the individual level, but also at the group level, through several mechanisms (e.g., emotional contagion) (Barsade et al., 2007; Kelly & Barsade, 2001). In spite of the importance of groups in organizations, research on the relationship between happy groups and productive groups, i.e. happy-productive group, is not abundant. Specifically, Kelly and Spoor (2013) determined that the number of studies that openly pay attention to the effect of positive affect on group performance is limited, and even fewer studies have examined the psychosocial mechanisms that could explain this relationship. Why do groups perform better when they are feeling good? In this regard, Rhee (2007) established that when group members interact together, they build social resources understood as those aspects of group functioning that emerge from interpersonal dynamics among members, which can be functional in achieving good performance (Oh, Chung, & Labianca, 2004). These group social resources are a key mechanism that explains the relationship between group positive emotions and group outcomes (Rhee, 2007).

The aim of this study is to explore how group positive affect leads to group performance by building group social resources through social interactions among group members. Therefore, it is important to examine whether the relationship between group positive affect and group social resources is associated with group performance, such as in- and extra- role performance.

In the present study, we attempt to make four theoretical contributions to the literature. First, according to the Broaden and Build Theory (B&B), positive emotions broaden people's momentary thought-action repertoires, build their personal resources, and enhance their health and fulfilment (Fredrickson, 1998, 2001). We intend to expand Fredrickson´s (2001) B&B theory by taking teamwork, coordination, cohesion, and supportive team climate into account as specific social resources that could be built through positive affect at the collective level (i.e., group). Second, following Rhee's proposal (2007), we intend to examine different group social resources as a mediator between group positive affect and group performance. In order to test mediation, we suggest different group positive emotions (i.e., enthusiasm, optimism, satisfaction, comfort), different group social resources (i.e., teamwork, coordination, cohesion, and supportive team climate), and different types of group performance (in- and extra-role performance, creative performance).Third, although group positive affect has been studied (Rhee & Yoon, 2011; Barsade & Knight, 2015), a review of the literature showed that the term happy-productive group has not been analyzed. Therefore, we intend to add to the research on the happy-productive group, by explicitly addressing the difference between a happy group and a productive group. Finally, Gable and Harmon-Jones (2008) determined that positive emotions and positive mood have similar effects on cognition and behavior. To support this conclusion and extend it to the group

level of analysis, we tested positive emotions and positive mood to obtain a comprehensive picture of group positive affect.

In addition to the theoretical contribution, the current study also makes two methodological contributions. First, we used aggregated scores for a group-level analysis (cd. Referent-Shift Consensus model; Chan, 1998) because our interest was to study group positive affect. Second, we tested the ecological validity of the results by using two independent studies with different samples (i.e., university students, employees) and methods (i.e., laboratory study, field study).

Finally, another strength of this study is the fact that we included the leaders/supervisors' ratings as measures of in- and extra-role performance, and more objective evaluator ratings as measures of creative performance, in order to obtain an external performance assessment and avoid common method variance.

Theoretical background and hypotheses

The Broaden and Build theory of positive emotions

According to the Circumplex model (Russell, 1980; Warr, 1990), the emotions are based on two core dimensions: pleasure and arousal. The horizontal dimension ranges from unpleasant to pleasant, whereas the vertical dimension ranges from low to high activation. Hence, positive emotions comprise high-activation pleasant emotions (e.g., enthusiastic, glad, happy, excitement, joy, contentment, cheerful, optimistic) and low-activation pleasant emotions (e.g., comfortable, drowsy, calm, relaxation, contentment).

With substantial empirical evidence, the Broaden and Build theory of positive emotions by Fredrickson (1998, 2001) shows that, first, positive emotions (e.g., joy, contentment, interest) broaden people's momentary thought-action repertoires (e.g.,

flexibility, creativity) and, afterwards, build enduring personal resources (i.e., physical, social, psychological, intellectual). For instance, joy as a high-activation pleasant emotion motivates to play and explore the limits, which eventually leads to building social bonds and increasing levels of creativity (Fredrickson & Cohn, 2008).

It is not surprising that Aristotle called humans the social animal because social relationships can help to undo some problems and improve wellbeing (Semmer & Beehr, 2014). In particular, the effect of positive emotions extends into the social domain in terms of expanded social connections, social support, and high-quality friendship bonds (Fredrickson, 2013; Kok & Fredrickson, 2010; Kok, et al., 2013; Vacharkulksemsuk & Fredrickson, 2013). Again and again, the literature has shown that positive emotions provide benefits related to social processes such as prosocial behavior and sociability (Lyubomirsky, King, & Diener, 2005), social connectedness (Mauss, et al., 2011), and social support (Salanova, Bakker, & Llorens, 2006). In sum, the effect of positive emotions achieves several social benefits, and it is crucial to examine their interpersonal effects in order to fully understand the role of emotions (Van Kleef, Homan, & Cheshin, 2012).

In groups, positive emotions strengthen an affiliation function (Van Der Schalk et al., 2011), enhancing bonds and social relationships (Spoor & Kelly, 2004). Considering the importance of social aspects (i.e., social resources) at the individual level, we propose that they could be relevant at the group level as well (i.e., group social resources). Therefore, in the current study, we consider social resources in groups as effects of positive affect and also as a psychosocial mechanism to explain how shared positive affect in groups is related to better group performance.

Group positive affect and Group social resources

Positive affect not only involves internal states that occur at the intra-individual level, but also processes developed between individuals, that is, at the group level (Barsade et al., 2007; Kelly et al., 2001). Considering that groups, not individuals, often take decisions and solve problems (Cohen & Bailey, 1997; Fisher & Ashkanasy, 2000), it is important to study how positive affect drives the behaviors and outcomes of groups (Barsade et al., 2007). Group positive affect based on affective convergence is defined as the affective composition of the group members (Barsade & Gibson, 1998), resulting from feeling similar levels of individual emotions when people work together (Barsade et al., 2015).

Recent research has confirmed the influence of group positive affect on group behaviors (Mackie, Smith & Ray, 2008), group functioning (Barsade & Gibson, 2012), and appropriately utilizing group resources (Meneghel, Salanova & Martínez, 2014; Kelly & Spoor, 2006). Resources are defined as "*those physical, psychological, social, or organizational aspects of the job that may be functional in achieving work goals"* (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001, p. 501). The resources generated are lasting in time, causing permanent dynamic processes with an impact on health, personal growth, and success over time (Fredrickon & Cohn, 2008). Specifically at the group level, social resources (i.e., social capital) refer to those aspects of group functioning that emerge from interpersonal dynamics among members. It is important to highlight that groups with high social resources can more successfully manage other types of group resources (i.e., competence, organizational) (Oh, et al., 2004).

The present study focuses on four specific group social resources that have been shown to be associated with group positive affect, namely, teamwork, coordination, cohesion, and supportive team climate. Teamwork can be described as the interactions

among members of the group to achieve common and shared goals (Sánchez Pérez, 2006). Evidence shows that happiness as a positive affect with high activation/high pleasure, is associated with better teamwork (Diener, & Oishi, 2005). Coordination refers to communication and activities related to time schedules (Stout, Salas, & Carson, 1994; Wagner, 1995), and higher positive affect (e.g., excitement, , enthusiastic, calm, relaxation) has been related to better group coordination (Sy, Côté, & Saavedra, 2005). Spoor and Kelly (2004) claimed that one role of group affect is to enable the development of group bonds, which may occur through cohesion. Cohesion is a multidimensional construct consisting of interpersonal attraction, commitment to task, and group pride that keeps members together (Mullen & Copper, 1994). For example, Vacharkulksemsuk (August, 2013) conducted a study with 41 undergraduate teams, obtaining a positive relationship between group positive affect (e.g., joy, excitement, contentment, relaxation) and cohesion. Finally, a supportive team climate includes several facets such as participation, cooperation, and trust among members (Van Muijen, et al. 1999), in addition to support from the organization (González-Romá, & Gamero, 2012). The latter study found that higher positive affect (i.e., cheerful, enthusiastic, optimistic) was associated with a higher support climate in teams (González-Romá, et al., 2012).

Subsequently, in the same way as in individuals (Fredrickson & Losada, 2005), group positive emotions lead to building social resources that arise from interactions among members. In other words, when groups have high levels of positive affect, the group is more focused on achieving common goals, communication related to time schedules is better, the bonds among members are stronger, and the support climate is higher. This evidence allows us to take the B&B theory a step further.

Group social resources and group performance

Grounded in a social functional perspective, Knight and Eisenkraft (2014) found that group social resources (i.e., aspects of the way members are related to others and to a group) have consistent positive effects on group performance. Social resources promote group performance because the members of socially integrated groups are coordinated and committed to group goals (Beal et al., 2003). Furthermore, we assumed that group social resources have a positive relationship with group performance because having a high level of social resources can benefit groups in terms of performance (Oh, et al., 2004; Van Emmerik & Brenninkmeijier, 2009) and creative behaviors (Rodríguez-Sánchez, Devloo, Rico, Salanova, & Anseel, 2016).

Performance is a construct that comprises two types of indicators, in-role and extra-role. According to Goodman and Svyantek (1999), in-role performance is related to the fulfillment of tasks that employees are expected to carry out as part of their job requirements. By contrast, extra-role performance refers to behaviors that are beneficial to the organization and go beyond job requirements. Recent research showed that groups with higher levels of cohesion, teamwork, and coordination have higher group performance (Meneghel, Martínez & Salanova, 2016; Torrente, Salanova, Llorens & Schaufeli, 2012; Vacharkulksemsuk, August, 2013). Specifically, extra-role behaviors include activities that enhance the exchange of information among colleagues, contribute in the improvement of interpersonal relationships, and generate an atmosphere of teamwork (O'Bannon and Pearce, 1999). Regarding the supportive team climate, climate influences performance because it encourages members to value their work, help other members, and satisfy social needs (Sun, Xu, & Shang, 2012). Thus, group social resources imply a degree of interaction among participants, which has been

found to be crucial for group success and better group performance (i.e., in-role, extra-role).

In addition, creativity at work can be defined as the production of useful, original ideas related to products, services, and processes (Amabile, 1997). Creative performance may contribute to organizational performance, help to solve problems, and create new products and services (Zhang & Bartol, 2010; Gilson, & Shalley, 2004). According to the Componential Model of Creativity (CMC, Amabile, 1996; Amabile, & Pratt, 2016) at individual/group level, creative performance requires the interaction of *intrinsic motivation* to do the task (e.g., positive affect such as interest, enjoyment and satisfaction), *skills in the task domain* (e.g. knowledge, expertise), and *creativity-relevant processes* (e.g., cognitive styles to taking new perspectives and thinking broadly), which operate in a similar manner as the Broaden process (Fredrickson, 1998, 2001). In addition, CMC proposes that the *social environment* influences creativity in multiple ways, such as interactions among group members and group dynamics. For instance, Hülsheger, Anderson, and Salgado (2009) established that cohesion is important for creative activities because it stimulates group members to interact with each other and facilitates the exchange of ideas within a supportive and non-threatening atmosphere. Different studies suggest that creativity increases in a group climate with an encouraging environment where people are collaborative, enthusiastic about new ideas, and non-critical (Amabile, n.d.; Connolly, Jessup, & Valacich, 1990). Regarding coordination, the literature shows diverse opinions about the effect of coordination on creative performance because the need to play with ideas under time limitations restricts idea generation and brainstorming (Gilson et al., 2004; Gilson, Mathieu, Shalley, & Ruddy, 2005). However, rules and norms are important for group functioning (Taggar & Elleis, 2007).

These considerations suggest that group social resources are needed to enable the effective functioning of creative performance because they lead members to create a perfect environment for developing creative ideas.

The current study

Positive emotions broaden people's momentary thought-action repertoires, building lasting social resources, and people who generate positive emotions are more likely to be social and friendly, which leads to developing a full and healthy life (Fredrickson et al., 2008). Analogous to the individual level, Rhee (2007) developed a theoretical framework that includes the antecedents, processes, and consequences of group positive affect. Feeling positive emotions (i.e., joy) broadens the interactions among group members through developing others' ideas and encouraging communication. These group momentary thought-action repertoires build enduring group social resources, such as friendship, a sense of membership, a feeling of closeness, social support, and social bonds. In the end, the development of group social resources enhances several group outcomes (e.g., creative performance) (Rhee, 2007). However, we attempted to improve these results by considering different group positive emotions (i.e., enthusiasm, optimism, satisfaction, and comfort), different group social resources (i.e., teamwork, coordination, cohesion, and supportive team climate), and different types of group performance (in- and extra-role performance, creative performance). In addition, Rhee (2006) only tested the model in a laboratory study, whereas we conducted two studies: laboratory and field.

Consistent with the mediation proposed by Rhee´s theory (2007), recent studies found that the relationship between group positive affect and several group outcomes is mediated by variables related to interactions among group members (Chi, Chung, &

Tsai, 2011; Baas, De Dreu & Nijstad, 2008; Meneghel, Salanova & Martínez, 2014, Shin, 2014). However, Kelly et al. (2013) determined that few studies openly address the effect of affect on group performance.

In the present study, we conducted two independent studies with different samples (i.e., university students, employees) and methods (i.e., laboratory study, field study). The first study is a laboratory study composed of a sample of university students, full time workers, and others types of workers. In order to test the ecological validity of the laboratory results, we proposed a second study, a field study composed of a sample of employees from different organizations.

In addition, previous reports about the effects of affect on broadening cognition and attention (Gable et al., 2008) determined that positive emotions and positive mood have similar effects on cognition and behavior, even though the conceptualizations of the emotional states (i.e., emotions, mood) are different. To support this conclusion and expand it to the group level of analysis, we evaluated group positive emotions (study 1) and group positive mood (study 2) to obtain a comprehensive view of the effect of people's positive affect on group behaviors.

Therefore, and taking the previous research into account, we formulated the following general study hypothesis (see figure 1): The relationship between group positive affect and group performance (i.e., in- and extra- role, creative performance) is fully mediated by group social resources. That is, group positive affect (i.e., enthusiasm, optimism, satisfaction, comfort) helps to build group social resources (i.e., teamwork, coordination, cohesion, supportive team climate), which in turn increase the performance (i.e., in- and extra- role, creative performance) of groups.

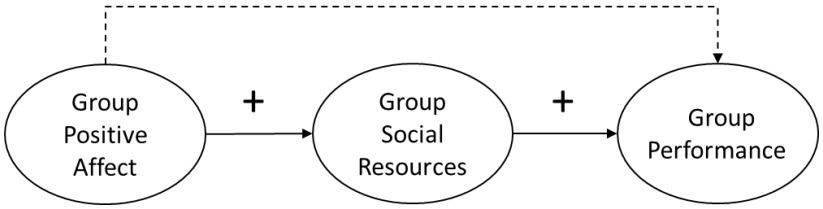

Figure 1. Proposed fully mediated model. Dotted lines show no significant paths.

STUDY 1

The first study is a laboratory study with university students, full time workers, and others types of workers, such as the unemployed, retired people, and housewives. According to previous research on the Broaden and Build Theory, we expect group positive affect to be positively related to group social resources (Hypothesis 1). Furthermore, we expect group social resources to be positively associated with group performance (i.e., in-extra role performance, creative performance) (Hypotheses 2 and 3). Finally, we sought to uncover whether group social resources fully mediate the relationship between group positive affect and group performance (i.e., in-extra- role performance, creative performance) (Hypotheses 4 and 5). The model for Study 1 is displayed in Figure 2.

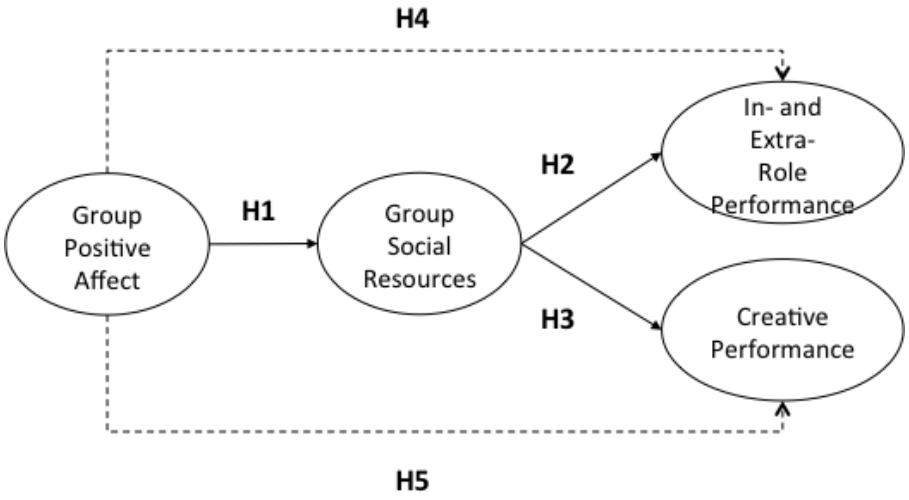

Figure 2. Proposed fully mediated model (Study 1). Dotted lines show no significant paths.

Method

Sample and Procedure

The sample consists of 449 participants nested in 112 small groups. The small group size ranged from 2 to 5 members, and each group had a leader. The members of the sample were university students from different degrees (Psychology, Law, Engineering, etc.; 71.9%), full time workers from a wide range of occupations (16.9%), and others (e.g., unemployed, retired, housewives; 11.2%). Specifically, 6.9% of these university students had a job. In the entire sample, 64.4% of the participants were female, and the average age was 25.39 years (SD = 10.03). The leader sample was composed of university students from different degrees (35.7%), full time workers from a wide range of occupations (37.5%), and others (e.g., unemployed, retired, housewives; 26.8%). Specifically, 15% of these university students had a job. In the leader sample, 50.9% of the leaders were female, and the average age was 36.27 years (SD = 14.28).

In order to collect the data, participants were recruited through a website, panels, and classes. The participants had to select a time and day of the week, and small groups were randomly formed depending on their choice, so the small groups had similar task skills. When each small group arrived at the laboratory, a leader was designated due to being older than the other participants in the group (a kind of status assignment similar to what occurs in companies). The leader's task was to control the time and manage the group. Then, researchers instructed to the group that they simulated to work for an organization dedicated to sell toys. During the session they had to complete a creativity task (i.e., design a poster that promoted a toy) in 45 minutes. Each participant received a small financial reward (20€) for taking part in the task and the high performance groups could receive an extra financial reward (until 450€). Researchers explained that the criteria to evaluate the performance were novelty, resolution and style. Finally,

researchers provided the material to compose the poster. After this task, the leader and participants had to complete the questionnaire about the variables studied. In the end, external evaluators evaluated creativity.

Measures

Group Positive Affect. We measured four group affects (i.e., enthusiasm, optimism, satisfaction, comfort), representing how the group had felt during the task. These affects were chosen to represent the two dimensions proposed by the Circumplex Model (Russell, 1980; Warr, 1990). The respondent is asked to choose the position s/he thinks the group has on a Faces Scale (Kunin, 1955), between two bipolar adjectives (e.g., Unenthusiastic vs. Enthusiastic), with 7 faces ranging from 0 (frowning) to 6 (smiling). The alpha for the scale was .93. This scale was validated in Salanova, Llorens, Cifre, and Martínez (2012). In addition, the literature defines the emotions as an intense response produced by a particular cause and unfolding over short time spans (Frijda, 1986; Lazarus, 1991). Therefore, in study 1 we evaluated the positive emotions as the group's reaction when facing a stimulus (i.e. organizational simulation exercise about creative aspects).

Group Social Resources: We measured group social resources with 3 scales: Teamwork (3 items, i.e. "*My team has set clear work objectives*"; alpha = .71), Coordination (3 items, i.e. "*My team was able to efficiently manage unexpected situations*"; alpha = .88), and Cohesion (3 items, i.e. "*The task has been realized in an amicable and pleasant atmosphere*"; alpha = .94). Items were scored on a 7-point Likert scale ranging from 0 (never) to 6 (always). The Teamwork and Coordination scales were taken from the study by Salanova, Cifre, Llorens, Martínez and Lorente (2011),

whereas the Cohesion scale was adapted from the study by Price and Mueller (1986). The Teamwork and Coordination scales were validated in Salanova, et al. (2012).

In- and Extra-role Performance: We used an adaptation of the Goodman et al. (1999) scales, reworded at the group level. The group leader assessed in-role performance (3 items; e.g., "*The team that I supervise performs all the functions and tasks demanded by the job*"; alpha = .92) and extra-role performance (3 items; e.g., "*In the team that I supervise, employees perform roles that are not formally required but which improve the organizational reputation*"; alpha = .86). Items were scored on a 7-point Likert scale ranging from 0 (never) to 6 (always). This scale was validated in Salanova, et al. (2012).

Creative Performance: The construct was assessed by three evaluators using the O'Quin and Besemer (2006) scale. These three evaluators were: one expert (i.e., who had professional expertise about the creativity task) and two researchers (i.e., who were not involved in the study and who received a brief assessment training about creativity). In order to obtain a group creative performance value, first the evaluators assessed the creativity individually in terms of novelty, resolution, and style. Then, the evaluators compared their notes and deliberated. Finally, the evaluators independently assessed the creativity of the group's performance on a 7-point Likert scale ranging from 0 (not at all creative) to 6 (highly creative).

Data analyses

We computed the means, standard deviations, Cronbach's alpha coefficients, and bivariate correlations for all scales. All variables were measured at the group level as the referent and, in the case of the group positive affect and group social resources measures, aggregated scores were employed for group-level analysis. According to

multilevel theory, this is defined as *Referent-Shift Consensus Composition* (Chan, 1998), meaning that there is a shift in the referent prior to consensus assessment. To statistically demonstrate within-team agreement and between-team differences, we conducted several tests: (1) the *Average Deviation Index* (AD_M; James, Demaree & Wolf, 1984; Burke, Finkelstein, & Dusig, 1999) was used to assess within-group agreement; and (2) the Intraclass Correlation Coefficient (ICC_1; Bliese, 2000) was used to assess reliability. Conventionally, an AD_M equal to or less than 1.2 is considered sufficient evidence of team agreement when items are scored on a 7-point Likert scale (LeBreton & Senter, 2008), whereas values greater than .05 for ICC_1 are considered sufficient evidence to justify aggregation (Bliese, 2000). Moreover, an ANOVA *F* value that is statistically significant is a condition that justifies the aggregation of scores at the group level (Kenny & LaVoie, 1985). The measures of in- and extra- role performance also have the group as the referent, but they do not have to show agreement because we only have one measure for each group, the one reported by the leader.

In order to exam common method variance, Harman's single factor test (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) was carried out using AMOS 21.0 (Arbuckle, 2010) for the variables assessed by the participants (i.e., group positive affect, group social resources).

Finally, we used Structural Equation Modeling (SEM) by AMOS 21.0, using the maximum likelihood estimation method. In order to test the hypotheses, two models were compared: M1, the fully mediated model; M2, the partially mediated model. To test the mediation hypotheses (Hypotheses 4 and 5), we used the product of coefficients method (MacKinnon, Lockwood, et al., 2002), due to the problems associated with the Baron and Kenny (1986) procedure for testing mediation (González-Romá, & Hernández, 2014). To compare the models tested, two absolute goodness-of-fit indices

were assessed: (1) the $\chi 2$ goodness-of-fit statistic and (2) the Root Mean Square Error of Approximation (RMSEA). Accordingly, four relative goodness-of-fit indices were used: (1) the Normed Fit Index (NFI); (2) the Tucker-Lewis Index (TLI); (3) the Incremental Fit Index (IFI); and (4) the Comparative Fit Index (CFI). Values below .06 for RMSEA and $p > 0.05$ for $\chi 2$ indicate a good fit. For the remaining indices, values greater than .90 indicate a good fit, whereas values greater than .95 indicate superior fit (Hu & Bentler, 1999). We computed the Akaike Information Criterion (AIC; Akaike, 1987) to compare competing non-nested models; the lower the AIC index, the better the fit (Kline, 2011).

Finally, based on Kline's recommendations (2011), we tested an alternative model (called M3) to make sure that the order of the mediating variables in the model is not arbitrary.

Results

Preliminary analyses

Table 1 presents means, standard deviations, internal consistencies (Cronbach's alpha), and bivariate correlations for all variables in the study, individual (N = 449) and group level (N = 112).

Each group positive affect is positively related to the other ones, and the in- and extra-role performances are also positively related. In addition, each group positive affect is positively related to creative performance. Moreover, each group positive affect is positively related to each group social resource, which in turn is positively related to in- and extra- role performance indicators and creative performance (with the exception of the correlation between creative performance and cohesion). In- and extra- role performance are not related to creative performance.

According to our measurements, the average AD_M value ranged from .53 to .84.

The average ICC_1 value ranged from .10 to .46. One-way ANOVA *F* values ranged from 1.46 to 32.5, and they were significant (*p* entre < 0.005 y < 0.000) for all variables. In conclusion, we found empirical justification for aggregation (Bliese, 2000; LeBreton & Senter, 2007).

Finally, the results of Harman's test (Podsakoff, et al., 2003) revealed that a one-factor model between group positive affect and group social resources showed a poor fit to the data: [$\chi 2$ (14) = 127.733, p = .000, RMSEA = .271, CFI = .669, NFI = .810, TLI = .739, IFI = .828, AIC = 169.733]. By contrast, results also showed that the two-factor model fit the data better than a one-factor model: [$\chi 2$ (13) = 24.498, p = .027, RMSEA = .089, CFI = .982, NFI = .964, TLI = .972, IFI = .983, AIC = 68.498]. The difference between the two models is also significant, in favor of the model with two latent factors, $\Delta\chi 2$ (1) = 130.235, $p < .001$. Consequently, common method variance is not a serious deficiency in these data. Moreover, in order to mitigate common method variance, two procedural remedies were implemented (Podsakoff, MacKenzie, & Podsakoff, 2012). First, we obtained the measures from different sources (group members, leaders, and evaluators). Second, we differentiated the scale properties shared by the measures of the predictor and mediator variables: group positive affect was scored on a "Faces Scale", whereas group social resources were scored on a "Likert Scale".

Table 1

Means, standard deviations, aggregation indices, reliability, and correlations for the study variables (Study 1)

Variables	M	SD	AD_M	ICC(1)	1	2	3	4	5	6	7	8	9	10
1. Enthusiasm	5.17	.62	.58	.15	-	.68**	.75**	.70**	.39**	.45**	.50**	-	-	-
2. Comfort	5.33	.55	.54	.10	.76**	-	.65**	.59**	.36**	.44**	.51**	-	-	-
3. Optimism	5.17	.64	.59	.14	.81**	.69**	-	.74**	.36**	.45**	.46**	-	-	-
4. Satisfaction	5.28	.65	.54	.18	.82**	.68**	.80**	-	.34**	.41**	.44**	-	-	-
5. Teamwork	4.66	.57	.59	.25	.55**	.46**	.52**	.56**	(.71)	.67**	.54**	-	-	-
6. Coordination	4.82	.59	.68	.23	.57**	.59**	.57**	.65**	.75**	(.88)	.71**	-	-	-
7. Cohesion	5.32	.54	.53	.20	.58**	.58**	.56**	.66**	.64**	.84**	(.94)	-	-	-
8. In-role performance (Leader assessed)	5.03	.89	-	-	.29**	.23*	.25**	.32**	.32**	.42**	.34**	(.92)	-	-
9. Extra-role performance (Leader assessed)	4.95	.91	-	-	.28**	.25**	.21*	.27**	.29**	.41**	.38**	.86**	(.86)	-
10. Creativity performance (Evaluators assessed)	3.28	.09	.84	.46	.19*	.22*	.20*	.20*	.19*	.20*	.13	.17	.11	-

Note: Correlations are presented at the individual-level (n=453, above the diagonal) and at the team-level (n=112, below the diagonal). Coefficient alpha reliability estimates are listed in the diagonal in parentheses.
*p<.05; **p<.01

Hypothesis Testing

To compute SEM, we used the aggregated database that included group positive affect, group social resources, in-extra- role performance, and creative performance (N=112). According to Brown (2006), in cases where it may be necessary to use single indicators in a SEM analysis, measurement error can be readily incorporated into a dimensional indicator by fixing its unstandardized error to some non-zero value, calculated on the basis of the measure's sample variance estimate and known psychometric information (e.g., internal consistency). Thus, we fixed the unstandardized error of the indicator of creative performance with the formula: variance*(1-alpha).

Table 2 shows the results of the SEM analysis. We expected full mediation by group social resources between group positive affect and group performance (in- extra-role performance and creative performance); thus, we tested the full mediation research model (M1). The path from group positive emotions to group social resources was positive and statistically significant ($\beta = .72$, $p < .001$), as was the path from group social resources to in- extra- role performance ($\beta = .46$, $p < .001$) and creative performance ($\beta = .25$, $p < .05$). This finding supported our Hypotheses 1, 2 and 3.

In order to test the mediation hypotheses (Hypotheses 4 and 5), we estimated the product of coefficients method (MacKinnon, et al., 2002). The mediated effect of Hypothesis 4 (group positive affect → group social resources → in-extra- role performance) was statistically significant ($P = Z_{\alpha} \cdot Z_{\beta} = 31.38$, $p < 0.05$), as was the mediated effect of Hypothesis 5 (group positive affect → group social resources → creative performance; $P = Z_{\alpha} \cdot Z_{\beta} = 8.11$, $p < 0.05$). However, the direct or non-mediated effect between group positive affect and in-extra- role performance was not statistically significant ($\tau = .065$, ns), or between group positive affect and creative

performance (**τ** = .292, ns). These results suggest a full mediation effect of group social resources between group positive affect and both group performances, in-extra-role performance and creative performance (see Figure 3). This finding supported our Hypotheses 4 and 5. Furthermore, the chi-square difference test between M1 (the Fully Mediated model) and M2 (the Partially Mediated model) shows a non-significant difference between the two models, $\Delta\chi 2$ (2) = 1.24, ns, which is to be interpreted in favor of the most parsimonious one, namely M1. Comparing the two models, M1 showed the lowest AIC value.

Alternative Models

To lend more credibility to our cross-sectional findings, we tested an additional competitive model (M3). Considering that it is also conceivable that group positive emotions fully mediate the relationship between group social resources and group performance (i.e., in- and extra-role performance, creative performance), based on the Job Demands-Resources model, which posits that employees' working conditions (i.e., job resources) are related to their psychosocial wellbeing, which in turn is associated with several outcomes (Demerouti, et al., 2001). When the models to be compared are not nested models, a fit index used to compare their fit is AIC (Akaike, 1987; Kline, 2011). Although the data fit M3 well, M1 showed the lowest AIC value; therefore, M1 is better than M3.

It is interesting to note that in M1, group positive affect explains 52.3 % of the variance in group social resources (R^2 = .528), which in turn explains 21% of the variance in in- and extra-role performance (R^2 = .210) and 6.3% of the variance in creative performance (R^2 = .063). The final model is depicted in Figure 3.

Table 2.

Goodness-of-fit indices for the SEM models (Study 1)

Models	χ^2	*df*	p	RMSEA	CFI	NFI	TLI	IFI	AIC	$\Delta\chi^2$	Δdf	ΔAIC
M1	40.87	33	.16	.05	.99	.95	.987	.99	104.87			
M2	39.61	31	.14	.05	.99	.95	.985	.99	107.61			
Diff. M1-M2										1.24 ns	2	2.73
M3	49.73	3	.03	.07	.98	.94	.97	.98	113.73			
Diff. M1-M3												8.86

Notes: χ2= Chi-square; df= degrees of freedom; RMSEA= Root Mean Square Error of Approximation; NFI= Normed Fit Index; TLI= Tucker-Lewis Index; IFI= Incremental Fit Index; AIC= Akaike Information Criterion
ns= non-significant

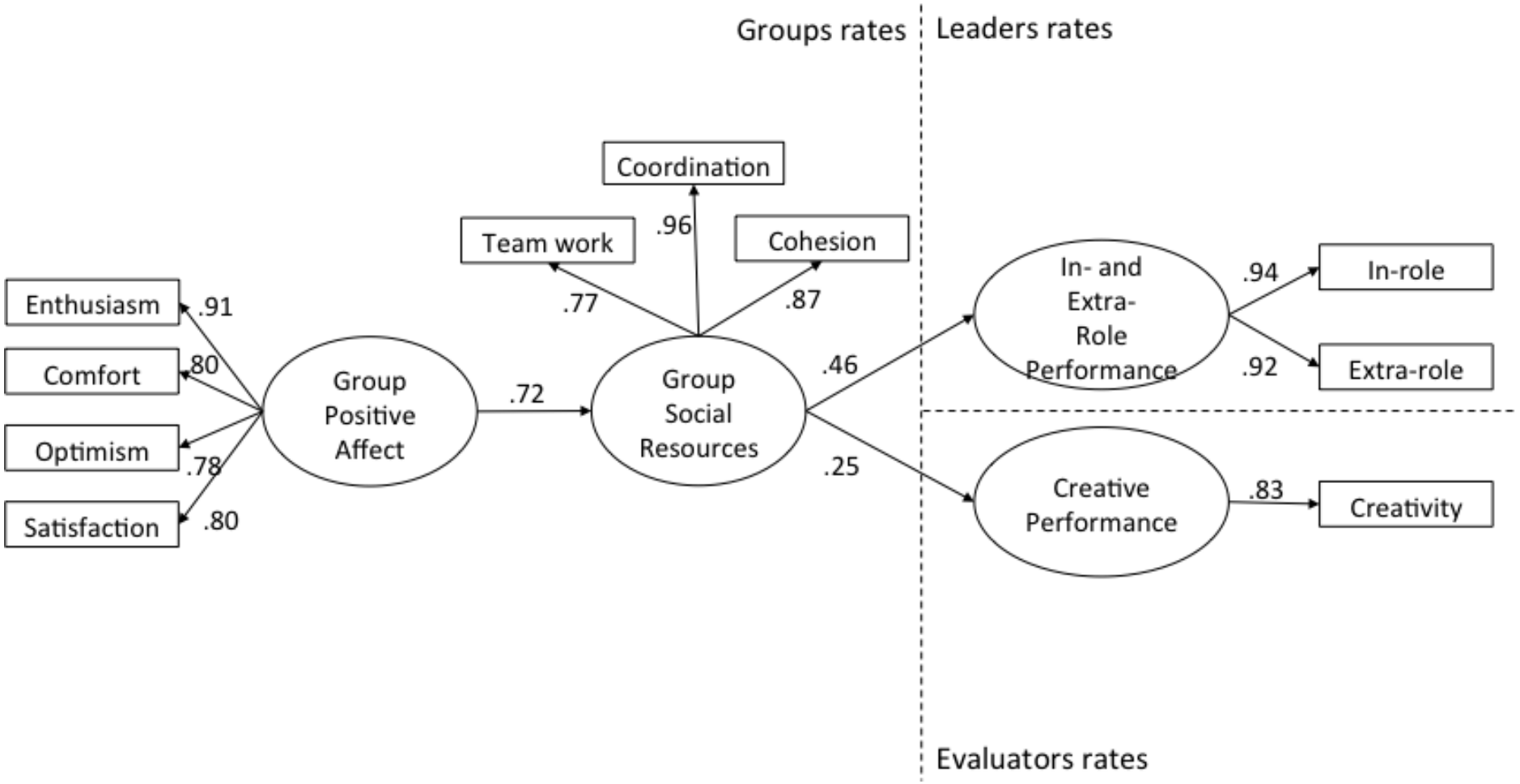

Figure 3. The final model with standardized path coefficients (N = 112) (Study 1)

STUDY 2

The second study is a field study with employees and supervisors from several organizations. According to previous research on the Broaden and Build Theory, we expect group positive affect to be positively related to group social resources (Hypothesis 1). Furthermore, we expect group social resources to be positively associated with group performance (i.e., in-extra role performance) (Hypothesis 2). Finally, we sought to uncover whether group social resources fully mediate the relationship between group positive affect and group performance (i.e., in- and extra-role performance) (Hypothesis 3). The Study 2 model is displayed in Figure 4.

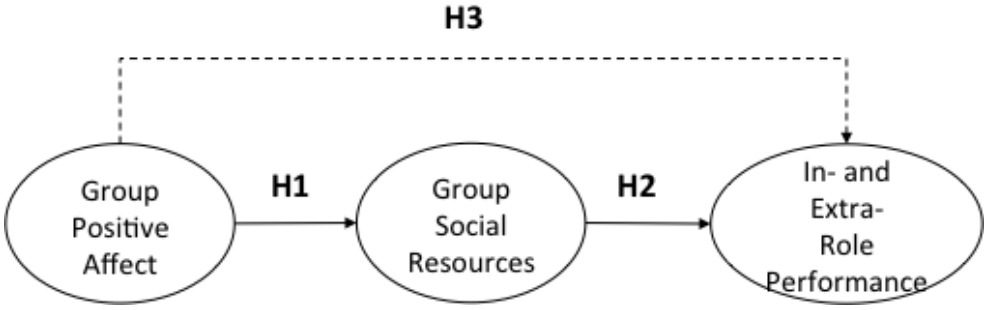

Figure 4. Proposed fully mediated model. (Study 2). Dotted lines show no significant paths

Method

Sample and Procedure

The sample consisted of 2,159 employees nested in 417 teams from 129 companies in Spain. In all, 97 companies belonged to the service sector, 26 to industry, and five to construction. Moreover, 52.8% were male, 82.4 % had an indefinite contract, 15% had a temporary contract, and 3.6% had other types of work situations (e.g., substitution, freelance). Average tenure in the company was 16.81 months (SD= 42.078).

Regarding the supervisors, 59.9 % were male, 87.4% had an indefinite contract, 1.5% had a temporary contract, and 11.1% had other working arrangements. The average tenure in the company was 31.99 months (SD= 124.87).

Finally, the group size ranged from 2 to 35 employees, with an average of 5.14 (SD= 4.4).

In order to collect the data, we contacted the key stakeholders in each organization (i.e., CEOs, Human Resources Managers) to provide them with details about the purpose and requirements of the study. After that, we administered the questionnaires to the participants. Employees were considered members of a group when they interacted often, shared job goals, had interdependent tasks, and had the same supervisor. In addition, the supervisor had to be responsible for the productivity and actions of the group.

Measures

In Study 2, we used identical measures to those used for employees in Study 1; however, and due to specific characteristics of the sample and study, we made several changes: 1) Considering that the literature defines mood as a diffuse feeling that is not focused on a specific target (Frijda, 1986; Tellegen, 1985), we measured group positive affect as representing how the group felt during the past year at work. The alpha of the scale was .93; 2) We did not evaluate cohesion as a group social resource, but instead we evaluated supportive team climate (3 items, i.e., "*In my team, constructive criticism is rewarded";* alpha = .85). The scale was taken from Van Muijen et al. (1999) and validated in Salanova et al. (2009); and 3) In order to obtain external performance, in- and extra-role performance were evaluated by the supervisor, who was responsible for

the productivity and actions of group. Cronbach's alphas for the aggregated scores are listed on the diagonal in parentheses (see Table 3).

Data analyses

We performed the same analyses as in Study 1.

Results

Preliminary analyses

Table 3 presents means, standard deviations, internal consistencies (Cronbach's alpha), and bivariate correlations for all the variables in study 2, individual (N = 2,159) and group level (N = 417).

Each group positive affect is positively related to the other ones, and group in-extra- role performances are also positively related. Moreover, each group positive affect is positively related to each group social resource, which in turn is positively related to in-extra- role performance indicators.

According to our measurements, the average AD_M value ranged from .87 to 1.2. The average ICC_1 value ranged from .13 to .23. One-way ANOVA *F* values ranged from 1.8 to 2.53, and they were significant ($p < 0.000$) for all variables. In conclusion, we found empirical justification for aggregation (Bliese, 2000; LeBreton et al., 2007).

Finally, the results of Harman's test (Podsakoff, et al., 2003) revealed that the one-factor model between group positive affect and group social resources showed a poor fit to the data: [$\chi 2$ (14) = 403.041, p = .000, RMSEA = .258, CFI = .814, NFI = .814, TLI = .728, IFI = .819, AIC = 445.041]. By contrast, results also showed that the two-factor model fit the data better than a one-factor model: [$\chi 2$ (13) = 50.312, p = .000, RMSEA = .083, CFI = .983, NFI = .977, TLI = .972, IFI = .983, AIC = 94.312]. The

difference between the two models is also significant, in favor of the model with two latent factors, $\Delta\chi 2$ (1) = 352.729, $p < .001$. Consequently, common method variance is not a serious deficiency in these data. Moreover, in order to mitigate common method variance, we implemented the same procedural remedies as in study 1.

Table 3

Means, standard deviations, aggregation indices, reliability, and correlations for the study variables (Study 2)

Variables	M	SD	AD_M	ICC(1)	1	2	3	4	5	6	7	8	9
1. Enthusiasm	3.64	1.04	.93	.16	-	.73**	.69**	.68**	.36**	.30**	.35**	-	-
2. Comfort	4.17	1.03	.92	.13	.79**	-	.69**	.72**	.38**	.32**	.35**	-	-
3. Optimism	4.02	1.02	.94	.13	.79**	.78**	-	.70**	.35**	.29**	.31**	-	-
4. Satisfaction	4	1.09	.94	.15	.74**	.79**	.78**	-	.35**	.30**	.34**	-	-
5. Team work	4.84	.76	.87	.18	.47**	.51**	.42**	.50**	(.80)	.67**	.55**	-	-
6. Coordination	4.66	.76	.88	.15	.40**	.45**	.39**	.37**	.74**	(.82)	.47**	-	-
7. Supportive team climate	3.81	1.1	1.2	.23	.48**	.54**	.44**	.45**	.69**	.57**	(.84)	-	-
8. In-role performance	4.68	.87	-	-	.13**	.16**	.11*	.15**	.19**	.15**	.19**	(.86)	-
9. Extra-role performance	4.65	1.01	-	-	.15**	.19**	.10*	.14**	.23**	.21**	.27**	.68**	(.78)

Note: Correlations are presented at the individual-level (n=2,159, above the diagonal) and at the team-level (n=417, below the diagonal). Coefficient alpha reliability estimates are listed in the diagonal in parentheses.
*p<.05; **p<.01

Hypothesis Testing

To compute SEM, we used the aggregated database that included group positive affect, group social resources, and in- and extra- role performance (N=417).

Table 4 shows the results of the SEM analysis. We expected full mediation by group social resources between group positive affect and in-extra- role performance, and so we tested the full mediation research model (M1). The path from group positive affect to group social resources was positive and statistically significant ($\beta = .598$, $p < .001$), as was the path from group social resources to in- and extra- role performance ($\beta = .294$, $p < .001$). This finding supported our Hypotheses 1 and 2.

In order to test the mediation hypothesis (Hypothesis), we estimated the product of coefficients method (MacKinnon et al., 2002). The mediated effect was statistically significant ($P = z_\alpha \cdot z_\beta = 40.67$, $p< .001$). However, the direct or non-mediated effect between group positive affect and in- and extra-role performance was not statistically significant ($\tau = .044$, ns). Furthermore, the chi-square difference test between M1 (the Fully Mediated model) and M2 (the Partially Mediated model) shows a non-significant difference between the two models, $\Delta\chi2\ (1) = .01$, ns, which is to be interpreted in favor of the most parsimonious one, namely M1. Comparing the two models, M1 showed the lowest AIC value. These results suggest a full mediation effect of group social resources between group positive affect and in- and extra-role performance (see Figure 4). This finding supported our Hypothesis 3.

Alternative Models

To lend more credibility to our cross-sectional findings, we tested an additional competitive model (M3). Considering that it is also conceivable that group positive emotions fully mediate the relationship between group social resources and group

performance (i.e., in- and extra-role performance), based on the Job Demands-Resources model, which posits that employees' working conditions (i.e., job resources) are related to their psychosocial wellbeing, which in turn is associated with several outcomes (Demerouti, et al., 2001). When the models to be compared are not nested models, a fit index used to compare the fit of statistical models is AIC (Akaike, 1987; Kline, 2011). Although the data fit M3 well, M1 showed the lowest AIC value; therefore, M1 is better than M3.

It is interesting to note that in M1, group positive emotions explain 35.8 % of the variance in group social resources (R^2 = .358), which in turn explains 8.7 % of the variance in in- and extra-role performance (R^2 = .087. The final model is depicted in Figure 5.

Table 4.

Goodness-of-fit indices for the SEM models (Study 2)

Models	χ^2	*df*	p	RMSEA	CFI	NFI	TLI	IFI	AIC	$\Delta\chi^2$	Δdf	ΔAIC
M1	62.45	25	.00	.06	.99	.98	.99	.99	120.45			
M2	62.44	24	.00	.06	.98	.98	.98	.98	122.44			
Diff. M1-M2										.01 ns	1	2.28
M3	78.916	25	.00	.07	.98	.97	.97	.99	136.92			
Diff. M1-M3												16.46

Notes: χ2= Chi-square; df= degrees of freedom; RMSEA= Root Mean Square Error of Approximation; NFI= Normed Fit Index; TLI= Tucker-Lewis Index; IFI= Incremental Fit Index; AIC= Akaike Information Criterion
ns= non-significant.

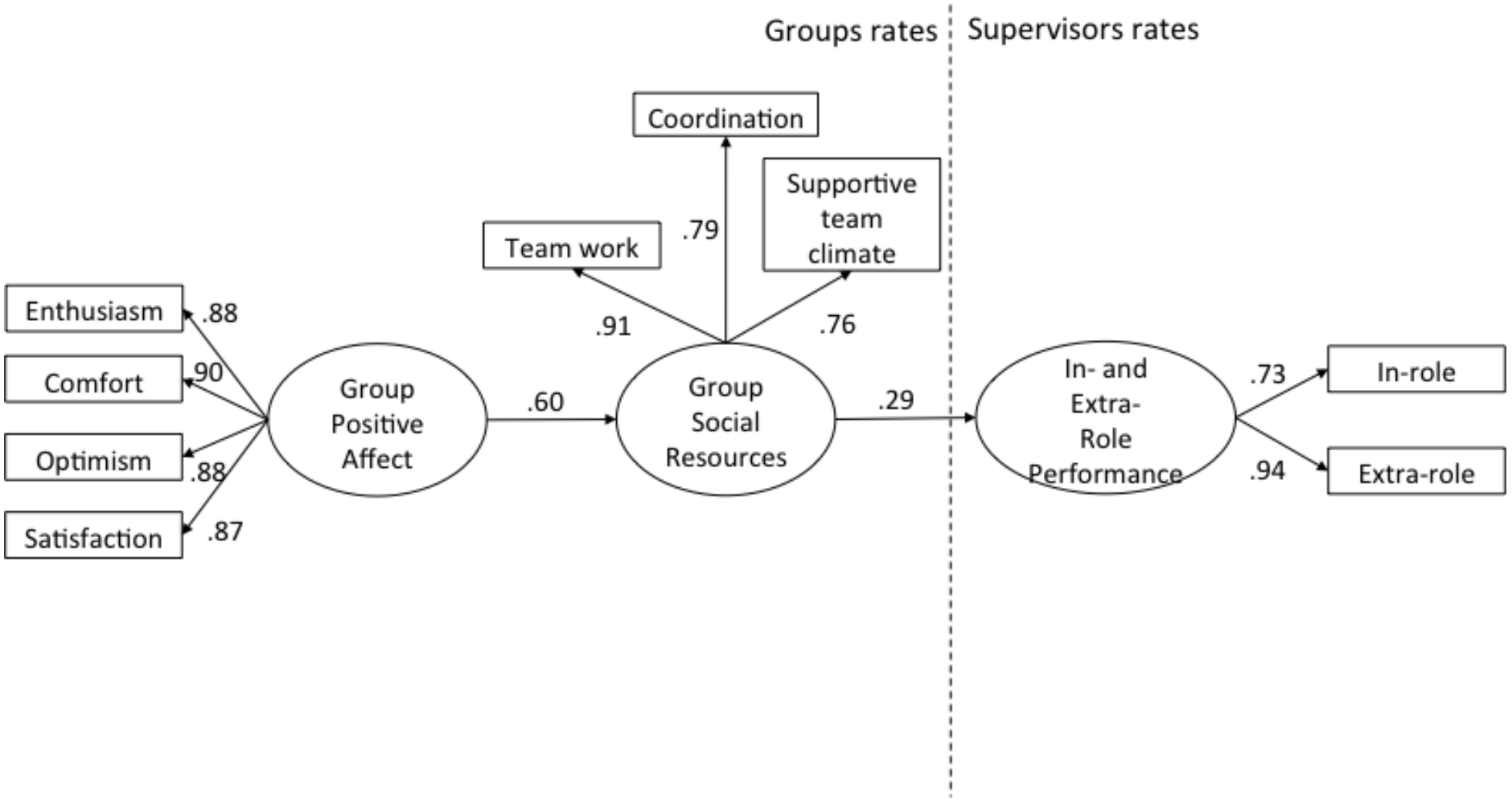

Figure 5. The final model with standardized path coefficients (N = 417) (Study 2)

Discussion

This paper contributes to the literature on the happy-productive group by examining the processes (i.e., group social resources) underlying the relationships between group positive affect and group performance. Based on B&B theory (Fredrickson, 1998; 2001), we hypothesized and found that group positive affect builds group social resources, which trigger group performance, in- and extra-role performance (study 1 and study 2), and creative performance (study 1).

The results supported our hypotheses, indicating that group positive affect (i.e., enthusiasm, optimism, satisfaction, comfort) was positively related to group social resources (i.e., teamwork, coordination, cohesion, supportive team climate), confirming Hypothesis 1 (study 1 and study 2). On the other hand, group positive resources were positively related to in- and extra-role performance reported by the leader/supervisor (confirming Hypothesis 2, study 1 and study 2) and creative performance reported by evaluators (confirming Hypothesis 3, study 1). Moreover, our study demonstrated significant mediation paths through group social resources. Specifically, it was revealed that group social resources fully mediate the effects of group positive affect on in- and extra-role performance (confirming Hypothesis 4, study 1, and confirming Hypothesis 3, study 2), and creative performance (confirming Hypothesis 5, study 1). Results from study 1 revealed that in- and extra-role performances were not positively related to creative performance. The reason could be that we evaluated the same phenomenon (i.e., design a poster that promoted a toy), but we used different units of measurement.

Theoretical Contributions

This study makes a number of contributions to the positive psychology literature by providing additional evidence about the functions of group positive emotions. First,

the B&B theory of positive emotions (Fredrickson, 1998, 2001) proposes that positive emotions increase social resources such as social support and connections among people. The present study expands this hypothesis to collective levels of analysis (i.e., small groups), and we propose that social resources (i.e., teamwork, coordination, cohesion, supportive team climate) are built as a result of social interactions among members.

Second, this study advances group performance research by identifying interaction processes underlying the positive affect-performance relationship in groups. In several ways, our results expand Rhee's study showing that social interactions among group members (e.g., building ideas, building communication) mediate the relationship between positive affect and group performance (e.g., creativity): 1) Following the Circumplex model (Russell, 1980; Warr, 1990), our study has considered a wide range of group positive affects (i.e., enthusiasm, optimism, satisfaction, comfort), and not only group joy; 2) We have identified one of the mechanisms that explain the relationship between group positive affect and group performance: group social resources (i.e., teamwork, coordination, cohesion, supportive team climate). However, it is important to notice that not always a happy group is also productive as well, because it depends on variables such as social resources that the group used in order to perform well. In that sense, positive affect allows the group to behave in a more flexible, creative, and open way and being more motivated to explore new behaviours; 3) In order to obtain a comprehensive view of group performance, we have considered complementary types of job performance (i.e., in-role, extra-role); 4) The model was tested in a field study, not only in a laboratory study.

Although the study of the happy-productive worker thesis is extensive, the study of an analogous model at the group level is not (i.e., happy-productive group). The

present study advances the construct of the happy-productive group by showing an analogous psychosocial process where happy groups (i.e. sharing more collective positive emotions among group members) are also more productive because they have better in- and extra-role performance and more creative behaviors.

Finally, the results of this study support the statement by Gable et al. (2008) about the similar effects of positive mood and positive emotions on behaviors and cognitions. We considered positive emotions in study 1 as task output, whereas positive mood in study 2 was studied as a positive feeling at work. Although the operationalization of the psychological constructs are different, the findings are quite similar, showing that our results are robust.

Practical Implications

Although the relevance of positive affect in organizations is not new (Barsade et al., 2007), organizations should care about and focus on employees' emotions, as well as group emotions. Positive leaders have to effectively manage cognitive aspects of team members, but also their emotional factors, which positively influence organizational outcomes (Ashkanasy, Härtel & Daus, 2002). For instance, Cruz-Ortiz, Salanova, and Martínez (2017) found that supervisors who developed a transformational leadership style increased group and individual performance only when they managed the group and individual positive emotions. This is because transformational leaders motivate and intellectually stimulate their followers, encourage pride, trigger enthusiasm, and transmit optimism about a desirable future (Ashkanasy & Tse, 2000).

Results from the present study suggest a promising direction for interventions to increase group positive affect. For example, HRM strategies could also be used to proactively build positive emotional experiences for organizational members. Moreover,

"*positive emotions hold a distinctly social origin, such that interacting with others is a common platform for emotions to arise*" (Vacharkulksemsuk et al., 2013, pp 51.). Along the lines of our results, these conclusions suggest that interventions should be focused on the group, rather than individually.

Finally, creativity in organizations implies a value added that the competition cannot copy. Results propose that enhancement of group positive affect seems to be the key to facilitating creativity, but it is also important to take care of the group's perceptions of social resources.

Limitations and Future Research

Despite obtaining interesting results, the present study has several limitations. A first limitation is that a non-probabilistic sample (i.e., convenience) was used, which might restrict the generalizability of these findings. However, the study 2 sample is a heterogeneous sample because it includes different groups from different companies with different sources of information (i.e., employees, supervisors), which allows us to obtain a view of the reality of the organization.

Second, some data were obtained from self-report measures (i.e., group positive affect, group social resources), which might have caused common method bias. However, given the nature of this study, which includes psychological experiences such as group positive emotions and group social resources, it is difficult to use objective data. Moreover, Harman's test suggests that common method variance should not be a major threat to the validity of our study. Finally, the use of external raters (in study 1, leader and evaluators, and in study 2, supervisor) of group performance is a strong point of this study that adds to the robustness of our findings, although we also understand that performance assessment by leaders might be biased.

Third, the idea that group positive affect emerges through social interaction is supported by different mechanisms, such as emotional contagion (Hatfield, Cacioppo & Rapson, 1992), empathy (Nelson, Klein & Irvin, 2003), similar group member reactions to shared events (Weiss & Cropanzano, 1996), and activating a group social identity (Seger, Smith & Mackie, 2009). Although in the current paper we did not consider these mechanisms, future studies should further analyze the underlying mechanisms that lead to shared affect among group members.

Fourth, although our research focused on documenting that group positive emotions start the process of the B&B theory, future research should examine the specific potential of group discrete emotions (e.g., joy, relaxation) on specific group action tendencies (Mackie, Smith & Ray, 2008). Moreover, we should consider that different jobs with specific action tendencies could lead to specific discrete emotions.

In addition, because group positive affect also has beneficial outcomes for individuals and groups in the organizational context (Fredrickson, 2003), it is important to identify its potential antecedents, such as healthy organizational practices.

A final limitation of the present study is that the data are cross-sectional. Although SEM analysis, specifically the proposed M3, provides some information about the possible direction of the relationships, cross-sectional study designs do not allow us to draw firm conclusions about the causal ordering among the variables studied. Thus, future research should focus on developing longitudinal studies with experimental designs in order to uncover the causal order among the study variables.

Final Note

This study adds to the growing literature on B&B theory at the group level and the happy-productive group thesis. It advances the knowledge in this area because it

contemplates group social resources as a mechanism that connects group positive affect to group outcomes, such as achieving task goals. The main strength of this study is the use of leaders/supervisors' ratings and evaluators' ratings to assess performance. The findings indicate that happy groups are productive groups when they are able to develop aspects related to interpersonal dynamics.

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CHAPTER 4

What makes a group happy? Enhancing group positive affect through multilevel antecedents[4]

Abstract

Although we are starting to understand more about happy-productive groups, knowledge about their antecedents continues to be scarce. The present study focuses on examining the role of HR practices (e.g., work-life balance, skills development), team resources (i.e., transformational leadership, autonomy, feedback), and team demands (i.e., quantitative overload, role ambiguity, role conflict) in happy groups (i.e. group positive affect). The sample is composed of 2,342 employees nested in 432 groups from 116 organizations. To test our hypotheses, we conducted hierarchical linear modelling. The results suggest that HR practices are directly related to group positive affect, whereas only certain team resources (i.e., transformational leadership, feedback) and team demands (i.e., quantitative overload) are associated with group positive affect. The findings highlight the importance of improving happy groups through positive interventions and job design, in order to build healthy and resilient organizations.

Keywords

Group Positive Affect, HR Practices, Team Resources, Team Demands, Happy Groups, JD-R theory, Hierarchical Linear Modelling.

[4] Chapter 4 has been submitted for publication as: Peñalver, J., Salanova, M., Martínez, I. M. & Schaufeli, W. What makes a group happy? Enhancing group positive affect through multilevel antecedents.

Introduction

Literature has shown that some processes and constructs are present not only at the individual level, but also at the group level (i.e., work engagement, efficacy beliefs; Salanova, Llorens, Cifre, Martínez, & Schaufeli, 2003). One example would be happy-productive groups, which, after feeling group positive affect (i.e., affective convergence of group members resulting from feeling similar levels of individual emotions when working together; Barsade & Knight, 2015), develop a positive mind-set, cultivate group interactions, and appropriately manage their resources, allowing them to reach high levels of productivity (Peñalver, Salanova, Martínez, & Schaufeli, 2017). But what can makes a group happy? Studies that explain the antecedents of happy groups (i.e., group positive affect) are limited because authors have focused on leadership mood, facilitators of the convergence of group positive affect (i.e., personality, demographic characteristics), and the interconnectivity of group members (Barsade et al., 2015). Through the Job Demands-Resources Theory (JD-R; Bakker, & Demerouti, 2017), which states that resourceful environments create wellbeing and productive employees, an answer can be found about what can make a group happy because the possible antecedents are extended.

However, despite the relevance of groups for organizations, research on JD-R theory has mainly been carried out at the individual level of analysis (Bakker, & Demerouti, 2017). In order to fill this gap, the purpose of this study is to encourage group positive affect by examining the predictor role of organizational resources (i.e., human resources practices), team resources (i.e., transformational leadership, autonomy, feedback), and team demands (i.e., quantitative overload, role conflict, role ambiguity).

The study addresses two theoretical issues. First, we intend to expand JD-R theory at the group level by examining whether constructs maintain their meaning

across levels of analysis (i.e., isomorphic variables). In addition, this study responds to the need identified by Bakker and Demerouti (2017) to carry out research on team resources and demands and integrate multiple levels in the model (i.e., organizational variables, group variables). Thus, we decided not to examine team resources and demands in dimensions, but instead to analyse the effect of each resource and demand separately to detect its true value in explaining group positive affect when other variables are present. Second, although group positive affect has been studied, a recent review of the literature showed that questions remain about the job antecedents of group positive affect (Barsade, et al., 2015).

We also considered two methodological contributions. First, we used aggregated scores according to the level of analysis, group and organizational (cd. Referent-Shift Consensus model; Chan, 1998). Schaufeli and Taris (2013) suggested that, although some authors have applied JD-R theory to employees working in teams, they violated the referent shift. Second, organizations are multilevel structures that require a multilevel approach. Thus, these results respond to the need identified by different authors (e.g., González-Romá, & Hernández, 2017) to study organizational phenomena from their specific levels of analysis.

The emergence of happy-productive group

Barsade and Knight´s review (2015) confirmed that positive affect occurs not only at the individual level, but also at the group level, through several mechanisms (e.g. emotional contagion). Considering that groups play a key role in organizations due to several issues, such as wellbeing (Wilson, DeJoy, Vandenberg, Richardson, & McGrath, 2004), decision-making (Cohen & Bailey, 1997), and performance (Salanova, et al. 2003), research has focused on studying the relationship between positive affect

and performance at the group level, that is, the so-called happy-productive groups (Peñalver et al., 2017). Happy-productive groups reach high levels of performance (i.e., in-role, ex-role, creative) for two reasons: 1) They act in a more flexible, creative, and open way, and they are more motivated to explore behaviours that are useful for group success, such as achieving common and shared goals, coordinating their activities with each other and considering time schedules, and nourishing a group positive climate based on participation, cooperation, and trust among members (Chi, Chung, & Tsai, 2011; Peñalver, et al., 2017). Moreover, social behaviours, such as developing relational bonds that link members to the group (Knight, & Eisenkraft, 2015), cultivate group interactions by developing others' ideas and encouraging communication (Rhee, 2007). 2) They experience aspects of wellbeing, such as resilience, due to feeling positive affect. Resilience allows them to face problems better, persevere when facing adversity, take risks, pursue their ideals with hope, and learn from past mistakes and achievements in order improve their strategies and grow positively (Meneghel, Salanova, & Martínez, 2014; Shin, 2014). This type of group reflects a more satisfied attitude toward the task and the environment (Chi, Chung, & Tsai, 2011), and the members believe in their ability to get a good job (Kim, & Shin, 2015; Valls, Tomás, & González-Romá, 2012).

Based on the number of studies on group positive affect (Barsade, & et al, 2015), scholars have been more interested in understanding the consequences of group positive affect and how to improve the productivity of groups than in knowing what the antecedents are. Nonetheless, because group positive affect has beneficial outcomes for individuals and groups in the organizational context (Fredrickson, 2003), it is also important to identify its potential antecedents.

The group-level antecedents of group positive affect: Team resources and demands.

Job Demands-Resources Theory (JD-R; Demerouti, et al., 2001) identifies a wide range of work characteristics that can be classified into two types: job resources and job demands. Although job resources and job demands are both related to wellbeing, they produce opposite processes, namely the motivational process and the health-impairment process, respectively. Job resources refer to the physical, psychological, social, or organizational characteristics that help to increase wellbeing and complete work goals. The motivational process describes how job resources promote employees' motivation and stimulate several positive states, such as positive emotions (Bakker, et al., 2017).

To date, preliminary investigations have attempted to expand JD-R theory by aggregating data at different levels of analysis (i.e., group level, organizational level). According to Jong and Ford (2016), teams develop resources as individuals because there are relationships across the organizational, group, and individual levels. That is, through a dual mode, teams are nourished by each employee's resources (bottom-up), and employees are enriched by the team's resources (top-down). Specifically, several studies have discovered that this relationship is apparently more complex, thus testing an isomorphic process. Torrente, Salanova, Llorens, and Schaufeli (2012) showed that team work engagement mediates the effect of team resources on team performance. In a similar vein, Meneghel, Martínez, and Salanova (2015) found that team resources were positively related to team performance through team resilience (as a synonym for group wellbeing).

In the present study, we focus on three specific team resources (i.e., transformational leadership, autonomy, feedback) that are present across various jobs

and organizations (Gruman, & Saks, 2011) and have been shown to be positively associated with positive affect. Transformational leadership is defined as a management style that employs the skills of developing oneself and others, as well as inspiring, transforming values and attitudes, motivating, and sharing the leader's vision with his/her followers (Rafferty, & Griffin, 2004). Previous evidence shows that positive leadership (e.g., coach, charisma, transformational) is positively related to positive emotions at the individual level (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2012) and the group level (Sy, Choi, & Johnson, 2013). However, we have concluded that there are two types of limitations of these group-level investigations: 1) Most authors pay more attention to emotional contagion from the leader to his/her followers, rather than the effect of the leader's behaviours on his/her followers (Barsade, & et al., 2015); 2) Studies that analyse group transformational leadership behaviours do not contemplate their effect on group positive affect as an aggregate value (Bono, Foldes, Vinson, & Muros, 2007; Liang, & Steve-Chi, 2012). Autonomy refers to the employee's decision to establish the schedule and the way to perform tasks (Jackson, Wall, Martin, &Davis, 1993). When the job gives employees the opportunity to decide how to do the work, employees may feel positive affects such as enthusiasm, joy, or satisfaction. This conclusion was drawn in Schaufeli and van Rhenen's (2006) study, which has been supported by other research projects (Johnson, & Spector, 2007; Xanthopoulou, et al., 2012). At the group level, some articles show the relevance of group autonomy (Grawitch, Munz, Elliott, & Mathis, 2003; Man, & Lam, 2003; Langfred, 2000), but no study analyses group autonomy based on JD-R theory, using a multilevel perspective and considering group positive affect as an outcome. Finally, feedback can be described as the knowledge the employee receives about his/her performance from the job itself, co-workers, or/and supervisors (Hackman, & Oldham, 1975). Although the benefits of

individual feedback are conclusive (Anseel, Beatty, Shen, Lievens, & Sackett, 2013), the role of group feedback is not clear because it has been studied very little (London, & Sessa, 2006). According to London and Sessa (2013), group feedback is related to improving group outcomes, and so we propose that improvement in group outcomes precedes group wellbeing (e.g., group positive affect). In other words, when groups are well-managed by a transformational leader, have autonomy in deciding how to deal with their own work, and are aware of their performance because they receive appropriate feedback, they reach high levels of positive affect. Therefore, taking the previous research into account, we propose that:

Hypothesis 1: Team resources are positively associated with group positive affect.

Following JD-R theory, in order to provide a comprehensive picture of group employees' jobs, job demands should also be considered. Job demands refer to the physical, psychological, social, or organizational characteristics that require effort and can damage employee wellbeing, with this process referred to as health-impairment (Bakker, et al., 2017). We focus on three specific team demands, namely, quantitative overload, role conflict, and role ambiguity. Quantitative overload is related to the amount of work that exceeds what the employee can do (Beehr, Walsh & Taber, 1976), whereas role conflict has to do with perceived clarity about the functions and tasks the employee must perform in the workplace (Rizzo, House & Lirtzman, 1970). Finally, role ambiguity refers to the degree to which employees perceive demands that are incompatible with each other (Rizzo et al., 1970). Research has concentrated on analysing the effects of job demands (e.g. quantitative overload, emotional demands, physical environment, work content) on wellbeing (e.g., enjoyment, engagement) at the

individual level (Bakker, van Veldhoven, & Xanthopoulou, 2010; Hakanen, Schaufeli, & Ahola, 2008), but there are still questions about which team demands influence group positive affect. That is, when groups perceive a large amount of work and their functions are unclear and incompatible each other, the group reaches low levels of positive affect. Thus, we formulate that:

Hypothesis 2: Team demands are negatively associated with group positive affect.

The organizational-level antecedents of group positive affect: Human resources practices

Nevertheless, in order to improve employees' wellbeing, organizations provide both team resources and organizational resources (i.e., human resources practices). Human Resources (HR) practices are defined as the activities planned from the human resources department to achieve the organizational objectives (Wright & McMahan, 1992). In a recent review, Bakker and Demerouti (2018) integrated the multiple levels of organizations (i.e., organizational, group, individual) into JD-R theory, examining how HR practices may stimulate wellbeing. Specifically, organizations manage HR practices with the purpose of structuring work processes and developing personal resources that would improve employees' psychological wellbeing (Salanova, Llorens, Cifre, & Martínez, 2012). For instance, skill training practices (i.e., job crafting) showed a positive effect on employee job crafting behaviours related to optimizing job resources and demands and improving personal resources and work engagement (Van Wingerden, Bakker, & Derks, 2016). Related to affective wellbeing, Vermeeren, et al. (2014) showed that HR practices were related to client satisfaction and employee absenteeism through employees' enjoyment at work. Therefore, we propose that:

Hypothesis 3: Human resources practices are positively associated with group positive affect.

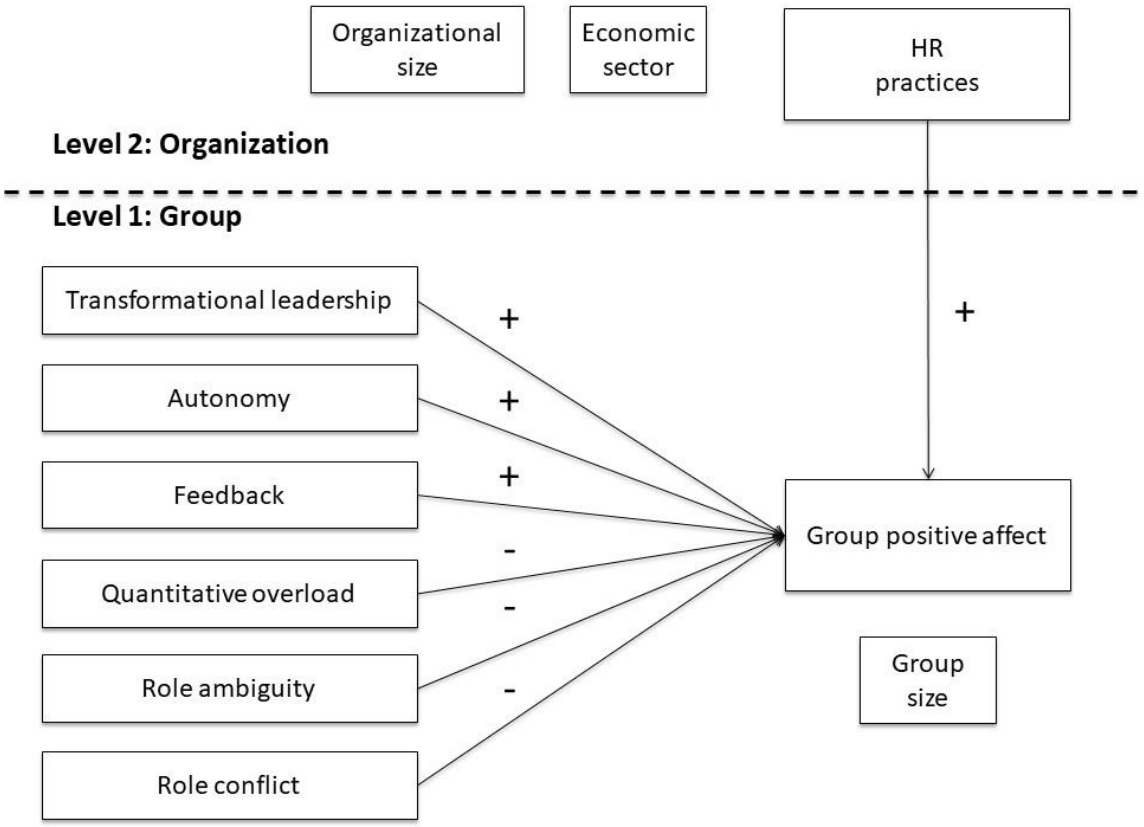

Figure 1. Proposed model.

Method

Sample and Procedure

The sample consists of 2,774 participants (2,342 employees and 432 supervisors) nested in 432 groups (group size ranged from 2 to 38 employees, and each group had a supervisor) from 116 organizations (organizational size ranged from 6 to 171 employees) from Spain. Specifically, the average organizational size was 3.7 groups, ranging from 1 to 20 groups.

In all, 73.3% companies belonged to the service sector, 21.6% to industry, and 4.3% to construction and .8% to agrarian.

About the employees, 55.2% were male, 82.9 % had a tenured contract, 14.1% had a temporary contract, and 3% had other types of work situations (e.g., substitution, freelance). Average tenure in the company was 55.1 months (SD= 67.86).

Regarding the supervisors, 62.4 % were male, 86.1% had an indefinite contract, 12% had a temporary contract, and 11.8% had other working arrangements. The average tenure in the company was 129.99 months (SD= 98.2).

In order to collect the data, we contacted the key stakeholders in each organization (i.e., CEOs, Human Resources Managers) to provide them with details about the purpose and requirements of the study. After that, we administered the questionnaires to the participants. Employees were considered members of a group when they interacted often, shared job goals, had interdependent tasks, and had the same supervisor. In addition, the supervisor had to be responsible for the productivity and actions of the group. Groups with more than one supervisor or with only one employee were not considered in this study.

Measures

According to *Referent-Shift Consensus Composition* (Chan, 1998), there is a shift in the referent prior to consensus assessment. Thus, the variables were measured with previously validated scales and reworded using “team” or “organization” as a reference (Salanova, et al., 2012).

Group Positive Affect: Following the Circumplex Model (Russell, 1980; Warr, 1990), we measured four group affects (i.e., enthusiasm, optimism, satisfaction, comfort), representing the group felt during the past year at work. The respondent is asked to choose the position s/he thinks the group has on a Faces Scale (Kunin, 1955),

in a specific positive affect (e.g., Enthusiastic), with 7 faces ranging from 0 (frowning) to 6 (smiling). The alpha for the scale was .93.

Team resources: Three team resources were measured, which items were scored on a 7-point Likert scale ranging from 0 (never) to 6 (always): Transformational Leadership (Rafferty & Griffin (2004); 15 items, e.g. "Our supervisor understands perfectly what the objectives of the group are""; α = .96), Autonomy (Jackson, et al, 1993); 3 items, e.g. "In my team, we determine when to start, when to finish and the order in which we do our homework" ; α = .67), Feedback (Hackman, et al., 1975); 3 items, e.g. "In my team, the work offers us a lot of information about how well we are doing it" ; α = .67).

Team demands: Three team demands were measured, which items were scored on a 7-point Likert scale ranging from 0 (never) to 6 (always): Quantitative overload (Beehr, et al., 1976; 3 items, e.g. "In my team, we have more work than we can really do" ; α = .89), Role ambiguity (Rizzo et al., 1970; 3 items, e.g. "In my team, we have disorganized tasks" ; α =.91), and Role conflict (Rizzo et al., 1970; 3 items, e.g. "In my team, we do tasks which we do not agree on" ; α = .87).

Human Resources (HR) practices: We measured HR practices with 8 practises (one item for practice except Organizational communication have 2 items), using a 7-point Likert scale ranging from 0 (never) to 6 (always): Work-private life balance, Mobbing prevention (i.e., "In the last year, mechanism and practices have been introduced in this organization in order to prevent mobbing at work"), Skills development, Career development, Psychosocial health (i.e., "In the last year, mechanism and practices have been introduced in this organization in order to ensure well-being and quality of life at work"), Perceived equity, Organizational communication, and Corporate social responsibility (i.e., "In the last year, mechanism

and practices have been introduced in this organization in order to ensure issues concerning corporate social responsibility are dealt with"). The alpha for the scale was 0.91.

Control variables: Based on previous studies about characteristics and wellbeing at work, we control for economic sector (Härenstam, et al., 2004), group size (number of direct reports) and organizational size (Acosta, Torrente, Llorens, & Salanova, 2015), in order to minimize the potential for the confounding effects of several relationships proposed in our model.

Data aggregation

To examine whether it is justified to aggregate individual responses to team level constructs (i.e., group positive affect, team resources, team demands) and organizational level construct (i.e., organizational practises), we conducted several tests. First, we examined the inter-rater agreement with the *Average Deviation Index* (AD_M; James, Demaree & Wolf, 1984; Burke, Finkelstein, & Dusig, 1999). An AD_M score equal to or less than 1.2 is considered sufficient evidence of team agreement when items are scored on a 7-point Likert scale (LeBreton & Senter, 2008). Second, the inter-rater reliability was assesed with the *Intraclass Correlation Coefficient* (ICC_1; Bliese, 2000), which values should be interpreted as effect size (i.e., .01 as small, .10 as medium, .25 as large; Murphy & Myors, 1998) instead fixed cut-off point (LeBreton et al., 2008).

Data analyses

Hierarchical linear modeling (Gavin & Hofmann, 2002) was employed for testing our data analyses by LISREL 9.3 (Jöreskog & Sörbom, 2015), using the maximum likelihood estimation method. Conventional statistical analyses violate the

assumption of independence of observations owing to the hierarchical structure of the data, which may lead to spurious results (Hox, 2002). We test adequacy of hierarchical linear modeling proposing a base line ANOVA model (Model 0), in order to evaluate ICC index. ICC is also interpreted as a measure of non-independence, as it tests the percentage of variance explained by contextual variables (Bliese, 2000). Higher ICC values imply higher the sum of variability that can be explained by variables at the higher-level of analysis (i.e., the organization). In addition, group-level predictors were group-mean centered to yield an unbiased estimate for the within-group slope, whereas organizational-level predictors were grand-mean centering in order to deals with multicollinearity, since it reduces the correlation between intercept and slope estimates across the higher level of analysis. (González-Romá, et al., 2017; Hofmann & Gavin, 1998).

To test our hypotheses, three models were tested following a step-by-step approach. First model, *or random coefficient regression model* (Model 1), group-level predictors (i.e., team resources, team demands), group-level control variable (i.e., group size) and covariates were included in the model. Thus, this model allows checking Hypotheses 1 and 2. The second model, or *intercepts-as-outcomes model* (Model 2), included also organizational-level predictors (i.e., organizational practises) and organizational-level control variables (i.e., organizational size, economic sector). This model permits to test the effect of organizational-level variables over and above the effect of group-level variables and covariates. Thus, this model allows checking Hypotheses 3. We considered two criteria to compare nested models: 1) χ^2 (i.e., –2 * log likelihood) value, so that low χ^2 values imply the better-fitted model (González-Romá, 2008); 2) the Bayesian Information Criterion (BIC, Schwarz, 1978), so that low BIC values imply the better-fitted model (Hardin, & Hilbe, 2007). Besides, González-Romá

and col. (2017) recommended reporting effect sizes, which can be interpreted according to guidelines for small, medium, and large effects (Murphy, & Myors, 1998).

Results

Data aggregation

According to our measurements, ICC_1 ranged from .08 to .28; (*F* values ranged from 1.49 to 2.92, $p < 0.000$). The average AD_M value ranged from .53 to .84. In conclusion, we conclude that the results supported the aggregation of measures (Bliese, 2000; LeBreton et al., 2007).

Preliminary analyses

Table 1 presents means, standard deviations, internal consistencies (Cronbach's alpha), and bivariate correlations for all variables in the study, group (N = 432) and organizational level (N = 116). Although the literature sustains that internal consistency (Cronbach's α) for the scales have to reach the cut-off point of .70 (Nunally & Bernstein, 1994), there are several arguments contrary to this strict criterion (Lance, Butts, & Michels, 2006). For that reason, we accepted in our study even Cronbach's α of .67.

As the table 1 shows, the correlations between group positive affect and team resources (i.e., transformational leadership, autonomy, feedback) were significant and positive, but were negative and significant their correlations with team demands (i.e., quantitative overload, role ambiguity, role conflict). We also included control variables (i.e. sector, group size, organizational size) in the correlation table. Group size was negatively related to team resources (i.e., transformational leadership, autonomy, feedback), but positive related to role conflict.

Table 1.

Means, standard deviations, aggregation indices, reliability, and correlations for the study variables

Variables	M	SD	ADM	ICC(1)	1	2	3	4	5	6	7	8	9	10
1. Group positive affect	3.72	.94	1.16	.16	(.93)	.58**	.26**	.45**	-.42**	-.49**	-.55**	-.07	-	-
2. Transfomational leadership	3.99	.86	.93	.24	-	(.96)	.34**	.59**	-.25**	-.43**	-.48**	-.14**	-	-
3. Autonomy	4.79	.73	1.11	.08	-	-	(.67)	.29**	-.11*	-.16**	-.19**	-.16**	-	-
4. Feedback	4.16	.82	1.19	.12	-	-	-	(.67)	-.18**	-.41**	-.37**	-.10*	-	-
5. Quantitative overload	2.93	1.11	1.15	.26	-	-	-	-	(.89)	.57**	.60**	.02	-	-
6. Role ambiguity	1.42	1	.98	.23	-	-	-	-		(.91)	.77**	.07	-	-
7. Role conflict	2.05	.95	1.10	.18	-	-	-	-	-	-	(.87)	.10*	-	-
8. Group size	5.42	4.53	-	-	-	-	-	-	-	-	-	-	-	-
9. HR practices	4.09	.91	.95	.28	-	-	-	-	-	-	-	-	(.91)	-
10. Organizational size	30.1	28.58	-	-	-	-	-	-	-	-	-	-	-.04	-
11. Economic sector	-	-	-	-	-	-	-	-	-	-	-	-	-.02	.05

Note: Correlations are presented at the group-level (n=432, above the diagonal) and at the organizational-level (n=116, below the diagonal). Coefficient alpha reliability estimates are listed in the diagonal in parentheses.
*p<.05,**p<.01;***p<.001.

Multi-level analyses and hypothesis testing

Results concerning the testing of Hypotheses 1 to 3 using hierarchical regression analyses are displayed in Table 2. The baseline ANOVA model (Model 0) showed that non-independence ICC for group positive affect was .31. Thus, Model 0 reveals that a significant proportion of the total variance in group positive affect (31%) was explained by organization membership. Once adequacy of hierarchical linear modelling had been demonstrated in Model 0, group-level variables (i.e., team resources, team demands, group size) were included in Model 1. As Table 2 shows, transformational leadership, feedback, and quantitative overload were significantly related to group positive affect, while no significant relationship was found between autonomy, role ambiguity, role conflict, group size and group positive affect. Therefore, results partial confirmed Hypotheses 1 and 2. Next, organizational-level variables (i.e., organizational practises, organizational size, economic sector) were also included in Model 2. As Table 2 shows, there were significant association between organizational practises and group positive affect, whereas no significant relationship was found between organizational size, economic sector and group positive affect. Therefore, results confirmed Hypothesis 3. The effect size of the significant predictors ranged from .15 to .49, that is, medium to large effect.

Table 2.

Hierarchical linear models results.

Parameters	DV = Group Positive Affect			
	Model 0	Model 1	Model 2	
	β (SE)	β (SE)	β (SE)	Effect size
Intercept	3.91***(.07)	3.91***(.07)	3.87***(.07)	.98
Transfomational leadership		.36***(.07)	.38***(.07)	.49
Autonomy		.09(.06)	.08(.06)	.22
Feedback		.16*(.07)	.16*(.07)	.26
Quantitative overload		-.15**(.05)	-.15**(.05)	.15
Role ambiguity		-.00(.08)	-.00(.07)	.01
Role conflict		-.11(.08)	-.12(.08)	.15
Group size		-.01(.01)	-.02(.01)	.16
HR practices			.37***(.07)	.26
Organizational size			-.00(.00)	.05
Economic sector			-.17(.1)	.08
Variance level 2	.29***(.07)	.42***(.07)	.32***(.06)	
Variance level 1	.65***(.05)	.32***(.04)	.31***(.04)	
BIC	1124.65	673.60	625.75	
–2 * log (likelihood)	1142.86	946.68	917.03	
d.f.	3	45	48	
Δ –2 * log (likelihood)		196.18***	29.65***	
Δ d.f.		42	3	

Note: DV = dependent variable; SE = standard error; BIC = –2 * log (likelihood) – (d.f.) ln(n) (Raftery, 1996); d.f. = degrees of freedom;
Effect Size = sqrt[tsq/(DF + tsq)]; *p<.05,**p<.01;***p<.001.

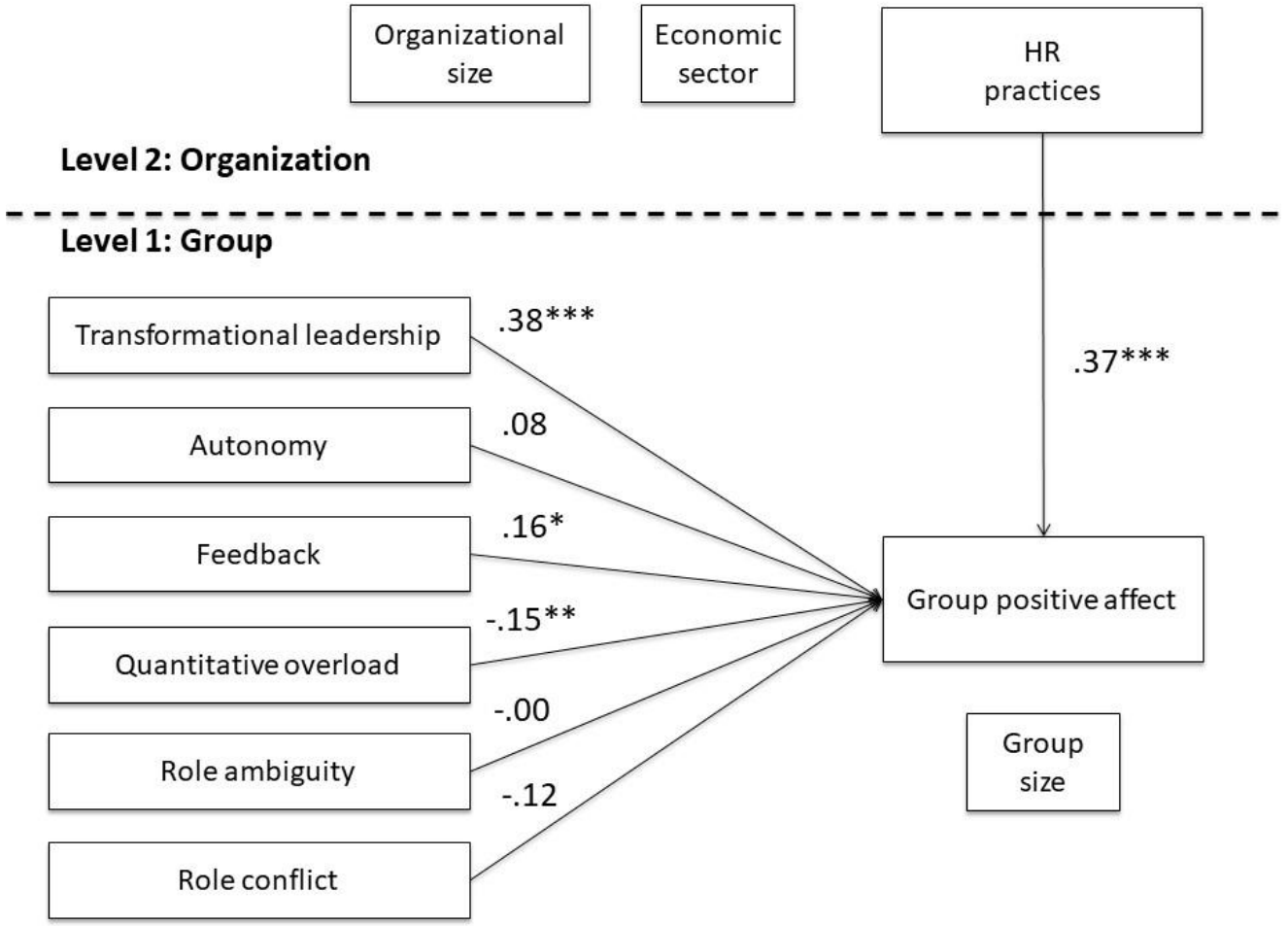

Figure 2. The final model with standardized path coefficients (N Level 1=432 groups; N Level 2=116 organizations).

Discussion

This paper contributes to the literature on the happy-productive group by examining the role of work antecedents in happy groups (i.e., group positive affect). Based on JR-D Theory (Demerouti, et al., 2001), we hypothesized that HR practices, team resources, and team demands would have an effect on group positive affect. However, the results indicated that not all the specific team resources and team demands have a significant effect on group positive affect, but only certain resources (i.e., transformational leadership, feedback) and demands (i.e., quantitative overload), partially confirming Hypotheses 1 and 2. With regard to autonomy, two possible explanations are considered: 1) Despite the relevant effect size (i.e, .22) shown by autonomy, the sample used could be too small to test the significant effect on group positive affect; 2) Taking the characteristics and needs of groups into account, they could be more sensitive to the effect of one type of resource versus another. In this case, groups seem to perceive social resources as more useful than task resources in promoting their group positive affect. Considering the distinction between challenge and hindrance demands (Crawford, Lepine, & Rich, 2010), we argue that hindrance demands (i.e., role conflict, role ambiguity) may not be relevant to the group because the members may have the strategies to deal with them. However, in order to perceive challenge demands (i.e., quantitative overload) as significant challenges (i.e, positive effect), the group may first need to evaluate the resources and skills moderating the demands (Meneghel, et al, 2016). On the other hand, HR practices were positively related to group positive affect, confirming Hypothesis 3.

Theoretical Contributions

This study enriches group positive affect research in several ways. First, JR-D Theory (Bakker, et al., 2017) suggests that team resources and demands are related to employee wellbeing. Our multilevel results expand this hypothesis to the collective level (i.e., group), and we identify certain antecedents (i.e., HR practices, team resources, team demands) that are related to group wellbeing (i.e., group positive affect).

Second, this research advances the study of the happy-productive group by identifying what makes a group happy. The review by Barsade and Knight (2015) pointed out numerous antecedents, such as leadership mood and interactions among group members, but our study considered a wide range of variables that have not been previously analysed.

Finally, the literature considers groups to be the central element of organizations because groups, and not individuals, make decisions and solve problems (Cohen et al., 1997; Fisher & Ashkanasy, 2000). Thus, taking the results into account, we consider that happy-productive groups could be the central part of healthy and resilient organizations. According to the HERO model (Salanova, et al. 2012), these organizations are focused on providing a resourceful job environment and developing healthy positive resources for employees and groups, in order to guarantee the effectiveness, economic survival, and future development of the organization.

Practical Implications

There is a substantial body of research on the meaning of leadership for employee and group wellbeing, as well as for organizational outcomes (Skakon, Nielsen, Borg, & Guzman, 2010). For instance, Kelloway and Barling (2010), after

analysing several interventions based on leadership development, proposed three conclusions: 1) Interventions in leadership may allow other types of positive interventions to be accepted as normal in organizations; 2) Interventions in leadership produce improvements in the leader him/herself and not only in his/her followers; 3) The interventions should not only be focused on the immediate supervisor, but also on mid-level and high-level managers because, due to a cascade effect, the lower levels could benefit from this intervention, or it could even have different effects on the employee. These results emphasize that leaders have to effectively manage groups' affective dynamics, suggesting a promising direction for new leadership interventions.

Finally, when the balance between team resources and demands is inadequate, a recurrent solution is the job design (Parker, Morgeson, & Johns, 2017). However, can groups also be designed? According to Morgeson and Humphrey (2008), groups may be designed by understanding how employees' characteristics (i.e., diversity, role) impact the group. Oldham and Hackman (2010) mention some characteristics that may be considered, such as type of task and type of group. On the other hand, some authors suggest that groups are not passive entities when they confront work goals. Specifically, team job crafting refers to the way team members together decide to develop new skills, combining their efforts to increase team resources and decrease team demands, in order to improve team performance through team work engagement (Tims, Bakker, Derks, van Rhenen, 2013).

Limitations and Future Research

The present study has several important limitations. First, it employed cross-sectional data, which means that the causal direction of the effects could not be established. Although longitudinal data and the experimental design are crucial for

establishing the causal direction, given the empirical support for the Job Resources-Demands Theory (Bakker, et al., 2017), it is difficult to defend any other specific type of causal relationship.

Second, some data were obtained from self-report measures (i.e., group positive affect, team resources, team demands), which might have caused common method bias. Nevertheless, it should be noted that: 1) Given the nature of this study, which includes psychological experiences such as group positive affect, it is difficult to use objective data; 2) We differentiated the scale properties shared by the measures of the predictor and outcomes variables: thus, team resources, team demands, and HR practices were scored on a "Likert Scale", whereas group positive affect was scored on a "Faces Scale"; 3) The high level of agreement among the employees on the same team, assessed by ICC_1 and AD_M, is a strength because it shows that there is agreement among the teammates' perceptions; 4) The use of external raters (i.e., supervisor) of HR practices is a strong point of this study that adds to the robustness of our findings, although we also understand that the assessment might be biased.

The last limitation has to do with the HR practices scale. The aim of this study was to evaluate the specific effect of each antecedent on group positive affect. However, according to the psychometric properties of the HR practices scale, it cannot be separated into dimensions, which has kept us from knowing the specific effect of each organizational practice. In addition, it may mean that practices occur together, and organizations develop all of them simultaneously. In addition, relevant to this issue, we think there are other organizational variables that can explain group positive affect, such as organizational values, culture, and climate (Barsade, & O'Neill, 2014). Thus, future studies need to pay closer attention to the relationship between organizational antecedents and happy-productive groups.

Final Note

This study advances the happy-productive group research because it contemplates work antecedents from a different level of analysis (i.e., group, organizational). The main strength of this study is twofold: 1) the use of supervisors' ratings to assess HR practices; 2) the analysis of organizational phenomena at their specific level of analysis, measuring the constructs by using referent-shift methods. The findings indicate which resources (i.e., team resources, HR practices) increase group positive affect, and which team demands reduce it.

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CHAPTER 5

Is there a limit to positivity? Glimpsing a new configuration of happy-and-productive groups[5]

Abstract

Theoretically speaking, happy-productive groups experience positive affect and reach high levels of job performance. However, recent research has shown that happy groups are not always the only productive ones. The aim of this study was twofold: first, to explore different patterns of happiness (i.e., group positive affect) and productivity (i.e., group job performance) at the group level; and second, to discover differences among the patterns. The sample is composed of 2,774 participants nested in 432 groups belonging to 116 organizations. Cluster and discriminant analyses were conducted, and the results suggest the existence of four patterns. Specifically, in order to encourage happy-productive groups, it is necessary to coach leaders (i.e., transformational leadership), spread team work engagement, increase group competence, and promote group efficacy. Thus, deficiencies in the emotional (i.e., transformational leadership, team work engagement) and cognitive resources (i.e., group efficacy, group competence) lead to groups with unhealthy patterns, such as happy-unproductive, unhappy-productive, and unhappy-unproductive workers. The findings show that organizations should constantly check the functioning of their groups in order to avoid wellbeing and performance problems.

Keywords

Group Positive Affect, Group Job Performance, Happy-Productive Groups, Cluster Analysis, Discriminant Analysis.

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Introduction

The relationship between affect and performance is a hot topic in occupational psychology research. In fact, Wright and Cropanzano (2007) developed the idea of happy-productive workers, proposing that "happy" workers will perform better than "unhappy" ones. According to Peiró, Ayala, Tordera, Lorente and Rodríguez (2014), previous research focused on the "bright side" of the happy-productive pattern and neglected the "dark side" (i.e., unhappy-unproductive, unhappy-productive, and happy-unproductive patterns), which has led to an incomplete view of this relationship. Specifically, findings on the beneficial effects of positive affect on performance are incomplete because they do not contemplate, for example, how excessive positive affect could be detrimental to performance (Grant, & Schwartz, 2011).

At the group level of analysis, research has recognized that there is a similar process called happy-productive groups[6] (Knight, & Eisenkraft, 2015; Peñalver, Salanova, Martínez, Schaufeli, 2017). Happiness indexed as group positive affect is the affective convergence of the group members resulting from feeling similar levels of individual emotions when working together (Barsade, & Knight, 2015). However, at the group level, the same questions arise as at the individual level: Apart from the happy-productive pattern, are there other patterns? What makes groups happy but unproductive or unhappy but productive?

In order to fill this gap, the aim of this study was twofold: first, to explore different patterns of happiness (i.e., group positive affect) and productivity (i.e., group job performance) at the group level; and second, to discover differences among the patterns. We attempt to make two theoretical contributions to the literature. First, we intend to expand Wright and Cropanzano´s theory (2007) (i.e., "happy" workers will

[6] Although the literature confirms the difference between group and team, in this study, the terms group and team are used interchangeably.

perform better than "unhappy" ones) by proposing that the same process occurs at group levels of analysis; that is, happy groups (i.e., through sharing more collective positive affect among group members) are also more productive because they have better group in- and extra-role performance. Second, following the Peiró and cols proposal (2014), we intend to study the dark patterns (i.e., unhappy-unproductive, unhappy-productive and happy-unproductive patterns) in greater depth at the group level in three ways: 1) explicitly addressing the difference among the four theoretical group patterns (i.e., happy-productive, happy-unproductive, unhappy-productive, unhappy-unproductive) through the existence of emotional and cognitive resources; 2) showing the non-monotonic effect of positive affect on job performance (Grant, & Schwartz, 2011); and 3) underlining the specific circumstances in which unpleasant states (e.g, negative affect, job dissatisfaction) could produce favourable outcomes (George, & King, 2007). Another strong point of this study is the inclusion of the supervisors' ratings as measures of group job performance, group efficacy, and group competence, in order to obtain an external performance assessment and avoid common method variance.

The happy-productive group

The happy-productive worker thesis proposes that "happy" workers will perform better than "unhappy" ones because unhappy-unproductive workers tend to recall negative aspects, inefficiently use social resources (Wright, & Cropanzano, 2007), and exhibit low levels of organizational and personal resources (Ayala, Peiró, Tordera, Lorente, & Yeves, 2016). However, are happy workers always productive workers? Previous studies confirm that high levels of positive affect reduce attention to negative information, overrate ideas and opportunities (Baron, Hmieleski, & Henry, 2012), and decrease proactive behaviours (Lam, Spreitzer, & Fritz, 2013). Taking these studies into

account, we could expect that happier workers are not always the best because workers can be less happy but remain productive. For example, people who feel negative emotions seem to pay more attention to details, which enhances performance when this type of task is compulsory (Gasper & Clore, 2002).

However, more and more studies show that there are homologous processes and constructs between different levels (i.e., individual, group), such as work engagement, efficacy beliefs, and happiness (i.e., group positive affect) (Barsade et al., 2015; Salanova, Llorens, Cifre, Martínez, & Schaufeli, 2003). Hence, because groups play a vital role in wellbeing (Wilson, DeJoy, Vandenberg, Richardson, & McGrath, 2004) and productivity (Flood, & Klausner, 2018), research has concentrated on studying the relationship between positive affect and productivity (i.e., group job performance) at the group level (Knight, et al., 2015), that is, happy-productive groups (Peñalver, et al., 2017). Happy-productive groups act in a more flexible and open way in order to explore healthy behaviours (e.g., cultivate group bonds) and experience wellbeing (e.g., resilience), which leads to high levels of group performance (Knight, et al., 2015; Meneghel, Martínez, & Salanova, 2015; Rhee, 2007).

Much like the findings at the individual level, under certain conditions, groups with high levels of positive affect might produce unproductive work environments. For example, Collins, Jordan, Lawrence and Troth (2015) showed that even happy groups require appropriate competencies to successfully achieve high levels of team performance (i.e., task, creative). In another study, group positive affect had a negative relationship with team creative performance when trust was high. However, unhappy but highly reliable groups obtained the best results on creative performance (Tsai, Chi, Grandey, & Fung, 2011). In other words, unhappy groups can also be productive, as Sy, Côté and Saavedra (2005) also confirmed in a laboratory study where groups with

negative feelings invested more energy in achieving suitable performance on the task than groups with positive feelings because workers understand negative affect to be an indicator of inadequate task progress that must be corrected. Likewise, in their meta-analysis, Knight and Eisenkraft (2015) proposed that group negative affect is susceptible to group context issues, even producing positive outcomes under specific circumstances. Specifically, group negative affect enhances social integration and group performance when the source of the negative feelings resides outside the group (e.g., the leader) or when employees are going to work together on a short and time-limited task.

Hence, in the same way as in individuals, we propose that:

Hypothesis 1: Four different patterns of groups exist in which group positive affect and group job performance can be related: Type 1 (happy-productive) is determined by high scores on group positive affect and high scores on group job performance; Type 2 (happy-unproductive) is determined by high scores on group positive affect and low scores on group job performance; Type 3 (unhappy-productive) is determined by low scores on group positive affect and high scores on group job performance; and Type 4 (unhappy-unproductive) is determined by low scores on both dimensions.

Transformational leadership

According to Rafferty and Griffin (2004), transformational leadership is defined in terms of five type of behaviours: (1) Vision occurs when leaders communicate the future best possible self of the organization, taking into account the organizational culture and values. Leaders transmit (2) inspirational communication through encouraging messages about the group and organization. Leaders who display (3) intellectual stimulation encourage employees and groups to use new ways to think and

reframe. (4) Support occurs when leaders show interest in their followers, considering their individual requests. Finally, leaders carry out (5) personal recognition through rewards, compliments, and greetings to reach specific aims. That is, a transformational leader develops, inspires, motivates, transforms values and attitudes, and shares his/her vision with the employees (Cruz-Ortiz, Salanova, & Martínez, 2013). Bono, Foldes, Vinson, and Muros (2007), in an experience sampling study, tested the effects of transformational leadership on positive affect at work. Results showed that employees only reported greater levels of happiness, enthusiasm, and optimism when their supervisor carried out transformational leadership behaviours. In addition, Cruz-Ortiz, Salanova, and Martínez (2017) also found that transformational leadership behaviours influence cross-level effects on positive affect; that is, transformational leaders foster relaxation, enthusiasm, comfort, optimism, resistance, and satisfaction in employees and in groups. In addition to the focus on positive affect outcomes, in their meta-analysis, Gang Wang, Oh, Courtright, and Colbert (2011) concluded that transformational leadership behaviours also show a link with group job performance. Specifically, results show that transformational leadership has a higher relationship with group job performance than with individual job performance. Taking this into account, we propose:

Hypothesis 2a: Transformational leadership will differentiate between the happy-productive group and the unhappy-unproductive group. That is, the happy-productive group pattern (type 1) will show better scores on transformational leadership than the unhappy-unproductive group pattern (type 4).

Team work engagement

Team work engagement is defined as a positive psychological state composed of vigour (i.e., high levels of physical and mental energy related to work), dedication (i.e., feeling of inspiration, enthusiasm, and pride), and absorption (i.e., being fully concentrated and happily absorbed in work), which occur when group members work together (Schaufeli, Bakker, & Salanova, 2006; Tims, Bakker, Derks, & van Rhenen, 2013; Torrente, Salanova, Llorens, & Schaufeli, 2012). Broaden and Build Theory (B&BT) proposes that positive affect (e.g., joy, contentment) broadens momentary thought-action repertoires (e.g., flexibility), builds resources (i.e., resilience), and enhances fulfilment (Fredrickson, 1998, 2001). In other words, groups that experience more frequent levels of positive affect have higher levels of group work engagement characterized by shared feelings of strength, passion, and focus on their tasks. (Peñalver, Salanova, Martínez, & Rodrigo, 2018, September; Salanova, Llorens, & Schaufeli, 2011). Moreover, research has confirmed a positive relationship between team work engagement and group job performance. Work engagement in groups is the underlying mechanism that motivates them to start actions using the available resources (e.g., social). For example, Torrente et al. (2012) found, in a sample of 62 teams, that work engaged groups satisfactorily completed formal job tasks and activities that were not required. Later, similar results were replicated by authors such as Tims and colleagues (Tims, et al., 2013) and Costa and colleagues (Costa, Passos, & Bakker, 2015). Therefore, we argue:

Hypothesis 2b: Team work engagement will differentiate between the happy-productive group and the unhappy-unproductive group. That is, the happy-productive group pattern (type 1) will show better scores on team work engagement than the unhappy-unproductive group pattern (type 4).

Group Efficacy

Bandura's (1997) social cognitive theory assumes that a group shares a "*belief in its capabilities to organize and execute the courses of action required to produce given levels of attainments*" (p. 447). This group belief is called group efficacy, and a strong group perception of efficacy has been found to be related to high group positive affect. Specifically, when groups feel good, they are more likely to believe that they are efficacious (Kim, & Shin, 2015; Valls, Tomás, & González-Romá, 2012). Another example is the laboratory study by Salanova et al. (2011), which found that group efficacy and group positive affect are also reciprocal over time. With regard to performance, group efficacy is posited as a significant predictor of group job performance. For instance, based on 96 studies involving 6128 groups, Stajkovic, Lee and Nyberg (2009) estimated that the relationship between group efficacy and group job performance had an average correlation of .35. In addition, previous authors verified in a structural equation modelling analysis that group efficacy is directly related to group performance. Hence, we propose:

Hypothesis 2c: Group efficacy will differentiate between the happy-productive group and the unhappy-unproductive group. That is, the happy-productive group pattern (type 1) will show better scores on group efficacy than the unhappy-unproductive group pattern (type 4).

Group Competence

Competencies or skills are described as characteristics, used alone or in combination, that are required at work in order to manage the job demands and achieve successful performance (Boyatzis, 1982; Dubois, 1993). Using a competency-based approach increases effectiveness in organizations through different processes such as

recruitment and team building (Draganidis, & Mentzas, 2006). Although it is obvious that employees who have the knowledge, competence, and attitude required for the job are going to perform effectively (Dubois, 1993), the influence on employee wellbeing is not as clear. Interestingly, several theories that focus on psychosocial factors, such as Resources-Experiences-Demands (RED; Salanova, 2005) and Job Demands-Resources Theory (JD-R, Bakker, & Demerouti, 2016), have incorporated the evaluation of personal resources (i.e., competence). According to the aforementioned theories, personal resources interact with both job demands and job resources to increase psychological wellbeing and organizational outcomes (i.e., performance). In fact, in two studies, Collins and colleagues (Collins, et al, 2015) checked whether group competence (i.e., emotional) moderates the relationship between group positive affect and group performance (i.e., task, creative). The results confirmed that highly competent happy groups have better performance than other groups with different levels of affect and competences (e.g., happy groups with inefficient competences, unhappy groups with adequate competences) because their positivity does not interfere with their decision-making or decrease attention to the task. In other words, employees and groups with the skills to manage the emotions of group members, work with a lot of information, concentrate, and carry out several tasks at the same time could make better use of available job resources (e.g., team work), in addition to dealing with job demands (e.g., quantitative overload), which would generate wellbeing (e.g., engagement) and high performance. Therefore, we argue:

Hypothesis 2d: Group competence will differentiate between the happy-productive group and the unhappy-unproductive group. That is, the happy-productive group pattern (type 1) will show better scores on group competence than the unhappy-unproductive group pattern (type 4).

Dark side of the happy-productive groups: the unhealthy patterns

Peiró et cols. (2014) referred to the "dark side" of the happy-productive thesis as consisting of those patterns that present an imbalance between the positive states experienced and the organizational results obtained, thus generating an unhealthy and unsustainable wellbeing (i.e., unhappy-unproductive, unhappy-productive, and happy-unproductive patterns). According to Diener (2000), wellbeing is related to people's estimations of both emotional and cognitive resources. Thus, considering that group wellbeing (i.e., group positive affect) leads to group job performance (Knight, et al., 2015; Meneghel, et al., 2015; Peñalver et al., 2017; Rhee, 2007), we propose that emotional and cognitive resources are necessary to achieve what we call a healthy group pattern, that is, happy-productive groups. But, if groups do not foster both emotional and cognitive resources, what might happen? Groups would develop unhealthy patterns, as in the happy-unproductive group and the unhappy-productive group.

As far as we know, the non-monotonic inverted-U-shaped effect illustrates how an excess of strength could be as detrimental to wellbeing as too little strength (Grant, & Schwartz, 2011). For instance, unrealistic optimism can lead to fruitless perseverance on the task and an improper analysis of the risks of one's actions, thus endangering and undermining healthy behaviours (Armor & Taylor, 1998). High levels of emotional activation (e.g. joy) interfere with the processing of relevant information and reduce performance (Beal, Weiss, Barros, & MacDermid, 2005). Along these lines, academics have hypothesized that over-engagement is also likely to cause negative consequences (Bakker, Albrecht, & Leiter, 2011). According to Macey and Schneider (2008), employees have limited energy and resources. Therefore, constantly working in highly demanding and aroused conditions in order to maintain an acceptable performance level could be both engaging and draining over time. In fact, the most work-engaged

employees have shown better in-role performance, as well as greater signs of irritability, fatigue, anxiety, and depression (Shimazu, Schaufeli, Kubota, Watanabe, & Kawakami, 2018). In addition, as Oishi, Diener and Lucas (2007) noted using longitudinal data, intense happiness may lack what motivates employees to continue to grow professionally, obtain better results, and continue to learn.

These aforementioned positive states experienced in a group strengthen each other by building a single, shared reality that can be intensified by a series of behaviours related to enhancing group coherence, consensus, and conformity (i.e., group centrism). This social phenomenon provides employees with a false perception of being confident, reliable, and valid, even when the circumstances indicate the opposite, as well as a tendency to inhibit viewpoints misaligned with the group's thinking (George, et al., 2007). Tsai et al. (2011) found that in specific situations (i.e., high levels of trust and positive affect), employees are likely to show a tendency to undermine deviant creative ideas. In sum, happy-unproductive groups would work in an environment that promotes different types of positive emotional states (e.g., positive affect, engagement). However, these experiences could boost a shared group thinking based on overconfidence and unconditional support for colleagues, which might lead the group to rule out any aspect that goes against the group and, ultimately, produce low levels of group performance. Thus, we suggest:

Hypothesis 3: Emotional resources will differentiate between the happy-unproductive group and the unhappy-productive group. That is, the happy-unproductive pattern (type 2) will show better scores on emotional resources than the unhappy-unproductive pattern (type 3).

With regard to the unhappy-productive pattern, prior studies suggest two different mechanisms to explain this phenomenon: 1) Negative affect and unpleasant

states could produce beneficial outcomes such as attention to details, critical thinking, and a methodical view when facing problems (Gasper et al., 2002; George, et al., 2007); 2) Unhappy employees might sometimes prioritize success over happiness (Grant, et al., 2011; Oishi et al., 2007). Considering the results obtained by the Marshmallow experiment, it is plausible to assume that postponing reward (and the satisfaction related to it) by making use of self-control could have greater benefits in the future (e.g. work promotion, income increase), although in the present one might feel dissatisfied (Mischel, 2014). However, job dissatisfaction or negative feelings could be interpreted as a sign that the job does not fit the person (e.g., challenges and competences are unbalanced; Delle Fave, Massimini, & Bassi, 2011), motivating employees to take action (e.g., job turnover) in order to reverse this feeling (Semmer, Tschan, Elfering, Kälin, & Grebner, 2005). Organizations with qualified staff (high competences) who perform simple and routine tasks (low level of challenge) produce boredom or apathy (indexed as negative feelings) among employees (Rodríguez, & Cifre, 2012). Although as far as we know, boredom has been positively related to poor performance, Büchel (2002) noted that over-qualified employees in low-skill jobs tend to be more productive than their colleagues with a good job-person fit. Ayala and cols. (2015) reached similar conclusions through discriminant analysis with 513 employees: Unhappy-productive workers, characterized by high scores on self-efficacy and over qualification, tend to feel unable to put their competences into practice, even though they believe they are capable of doing so. Although these job conditions inhibit their positive affect, they could encourage them to challenge their current job position and perform satisfactorily.

These aforementioned negative states experienced by a group are more likely to develop a multiple-shared reality. That is, unlike the happy-unproductive group, the unhappy-productive group notices possible complications, encourages criticism,

integrates the divergent opinions of group members, and accepts new knowledge even if it goes against past information, while always seeking to complete their tasks (George, et al., 2007). Taking these arguments into account, we suggest that a negative mood is not incompatible with doing a good job, especially when employees and groups have cognitive resources available, such as open-mindedness to divergent ideas and motivation to change their situation, as well as the competences (e.g., qualified) and confidence (e.g., efficacy beliefs) that a job well done will have future benefits in developing their happiness.

Hypothesis 4: Cognitive resources will differentiate between the unhappy-productive group and the happy-unproductive group. That is, the unhappy-productive group pattern (type 3) will show better scores on cognitive resources than the happy-unproductive group pattern (type 2).

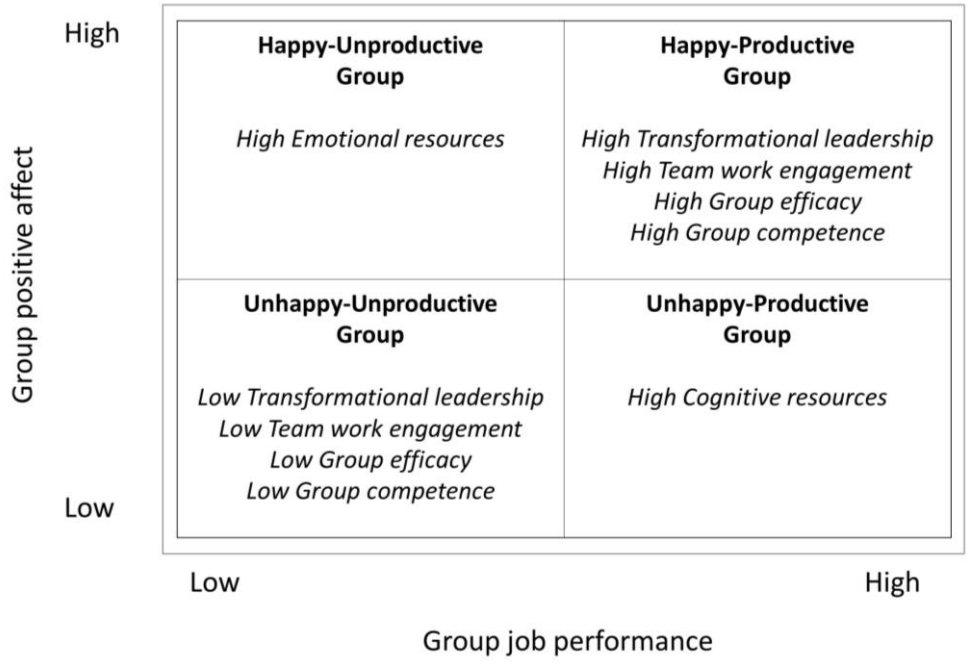

Figure 1. Summary of the four patterns of relations between group positive affect and group job performance.

Method

Sample and Procedure

The sample consists of 2,774 participants (2,342 employees and 432 supervisors) nested in 432 groups (group size ranged from 2 to 38 employees, and each group had a supervisor) belonging to 116 organizations (organizational size ranged from 6 to 171 employees) from Spain. In all, 85 companies belonged to the service sector, 25 to industry, and 5 to construction and 1 to agrarian.

About the employees, 55.2% were male, 82.9 % had an indefinite contract, 14.1% had a temporary contract, and 3% had other types of work situations (e.g., substitution, freelance). Average tenure in the company was 55.1 months (SD= 67.86).

Regarding the supervisors, 62.4 % were male, 86.1% had an indefinite contract, 12% had a temporary contract, and 11.8% had other working arrangements. The average tenure in the company was 130.0 months (SD= 98.2).

In order to collect the data, we contacted the key stakeholders in each organization (i.e., CEOs, Human Resources Managers) to provide them with details about the purpose and requirements of the study. After that, we administered the questionnaires to the participants. Employees were considered members of a group when they interacted often, shared job goals, had interdependent tasks, and had the same supervisor. In addition, the supervisor had to be responsible for the productivity and actions of the group. Groups with more than one supervisor or with only one employee were not considered in this study.

Measures

According to *Referent-Shift Consensus Composition* (Chan, 1998), there is a shift in the referent prior to consensus assessment. Thus, the variables were measured with previously validated scales and reworded using “team” as a reference (Salanova,

Llorens, Cifre, & Martínez, 2012). Respondents answered using a 7-point Likert-type scale ranging from 0 (*never/totally disagree*) to 6 (*always/totally agree*).

Group Positive Affect: Following the Circumplex Model (Russell, 1980; Warr, 1990), we measured four group affects (i.e., enthusiasm, optimism, satisfaction, comfort), representing the group felt during the past year at work. The respondent is asked to choose the position s/he thinks the group has on a Faces Scale (Kunin, 1955), in a specific positive affect (e.g., Enthusiastic), with 7 faces ranging from 0 (frowning) to 6 (smiling). The alpha for the scale was .94.

Group Job Performance: We used an adaptation of the Goodman and Svyantek (1999) scales, reworded at the group level. The group supervisor assessed in-role performance (3 items; e.g., "*The team that I supervise performs all the functions and tasks demanded by the job*") and extra-role performance (3 items; e.g., "*In the team that I supervise, employees perform roles that are not formally required but which improve the organizational reputation*"). The alpha for the scale was .88.

Transformational leadership: We measured using the five dimensions proposed by Rafferty and Griffin (2004): Vision (3 items; e.g., "*Our supervisor understands perfectly what the objectives of the group are*"); Inspirational communication (3 items; e.g., "*Our supervisor says positive things about the department*"); Intellectual stimulation (3 items; e.g., "*Our supervisor has ideas that make us think about questions that we had never thought about before*"); Support (3 items; e.g., "*Our supervisor thinks about our personal needs*"); and Personal recognition (3 items; e.g., "*As a supervisor, I congratulate workers personally when they do excellent work*"). Employees had to respond to the fifteen items with their immediate supervisor in mind. The alpha reliability for this scale was .96.

Team work engagement: We measured with 3 scales, one for each dimensions: vigor (7 items, e.g. "*While working, my team feels full of energy*"), dedication (4 items, e.g. "*My team is enthusiastic about the task*"), and absorption (7 items, i.e. "*While working, we forget everything else around us*"). Scale was taken from the study of Torrente, Salanova, Llorens, and Schaufeli (2013). The alpha for the scale was .93.

Group efficacy: Supervisor assessed the group coordination through a scale composed by 3 items (e.g. "*The team that I supervise can work well although we find lot of obstacles in our way*") taken from the study of Salanova, Llorens, Cifre, Martínez, and Schaufeli (2003). The alpha reliability for this scale was .90.

Group competence: Supervisor assessed the group competence through an adaptation of the Van Veldhoven and Meijman (1994) scales, reworded at the group level (3 items; e.g. "*The team that I supervise can work with lots of written information and data*"). The alpha reliability for this scale was .72

Control variables: According to the influence on wellbeing and performance at work, we control for economic sector (Härenstam, et al., 2004), group size (number of direct reports) and organizational size (Acosta, Torrente, Llorens, & Salanova, 2015; Collins, et al., 2015).

Data aggregation

To examine whether it is justified to aggregate individual responses to group level constructs (i.e., group positive affect, team work engagement, transformational leadership), we conducted several tests: (1) the *Average Deviation Index* (AD_M; Burke, Finkelstein, & Dusig, 1999; James, Demaree & Wolf, 1984) was used to assess within-group agreement; and (2) the *Intraclass Correlation Coefficient* (ICC_1; Bliese, 2000) was used to assess reliability. Conventionally, an AD_M equal to or less than 1.2 is considered sufficient evidence of team agreement when items are scored on a 7-point

Likert scale (LeBreton & Senter, 2008), whereas values greater than .05 for ICC_1 are considered sufficient evidence to justify aggregation (Bliese, 2000). However, the measures other measures (i.e., group job performance, group efficacy, group competence) also have the group as the referent, they do not have to show agreement because we only have one measure for each group, the one reported by the supervisor.

Data analyses

First, to address hypothesis 1, we perform cluster analysis using a two-step procedure, which standardize to Z-scores (M = 0, SD = 1), so as to balance the contribution of each variable within this analysis (Hair, & Black, 2000) and easily lead to interpret the results (Nunnally, & Bernstein 1994). To classify the four patterns of relationships, the 432 groups were clustered according to their levels of group positive affect and group job performance. The distance between group positive affect and group job performance was tested through the use of log-likelihood. Whereas, we computed the Bayesian Information Criterion (BIC, Schwarz, 1978) to compare cluster models, so that low BIC values imply the better-fitted model (Hardin, & Hilbe, 2007).

Second, discriminant analysis were used, in order to address hypotheses 2-4 and test the differentiating power of team work engagement, transformational leadership, group efficacy, group coordination, and group competence across the four patterns. The stepwise solution (criterion was minimization of the Wilks' lambda) lead to eliminate those variables that did not provide predictive power to function at a probability of .01 or lower.

Results

Preliminary analyses and data aggregation

Table 1 presents means, standard deviations, internal consistencies (Cronbach's alpha), and bivariate correlations for all variables in the study at group level (N = 432).

According to our measurements, ICC_1 ranged from .14 to .24 (*F* values ranged from 1.88 to 2.7, and they were significant $p < 0.00$ for all variables). The average AD_M value ranged from .69 to 1.1. In conclusion, we conclude that the results supported the aggregation of measures (Bliese, 2000; LeBreton & et al., 2007).

Table 1.

Means, standard deviations, aggregation indices, reliability, and correlations for the study variables at group level.

Variables	M	SD	AD_M	ICC_1	1	2	3	4	5	6
1. Group positive affect	3.76	1.65	1.1	.16	(.94)	.21**	.64**	.60**	.15**	.08
2. Group job performance	4.12	1.58	-	-		(.88)	.18**	.29**	.63**	.57**
3. Team work engagement	4.32	1.60	.69	.24			(.93)	.55**	.16**	.08
4. Transformational leadership	4.18	1.57	.93	.14				(.96)	.20**	.20**
5. Group efficacy	2.86	1.80	-	-					(.90)	.55**
6. Group competence	5.08	.43	-	-						(.72)

*p<.05,**p<.01;***p<.001.

Cluster analysis

The two-step cluster analysis identified a 4-cluster solution according to group positive affect and group job performance values (Figure 2): Cluster 1, happy-productive, comprised 26.6% of the sample (115 groups); Cluster 2, happy-unproductive, comprised 20% of the sample (86 groups); Cluster 3, unhappy-productive, comprised 14.4% of the sample (62 groups); Cluster 4, unhappy-unproductive, comprised 38.7% of the sample (167 groups). Analysis identified 2 groups as outlier. In order to choose the cluster solution, we considered the best fit of

BIC value (Schwarz, 1978), that is, the lowest (Table 2). Therefore, this finding supported our hypothesis 1, which was to identify these four patterns of relationships.

Figure 2. Four-cluster solution using standardized means of group positive affect and group job performance.

Table 2.

BIC fit index according to the number of clusters proposed.

Models	BIC
1	350.501
2	271.646
3	221.454
4	211.879
5	212.597

Discriminant analysis

The stepwise solution identified economic sector and organizational size as not significant variables, whereas group size as significant. Moreover, analysis produced three functions that significantly explained difference between groups: The first function (centroids) maximally separates the unhappy-unproductive pattern from the happy-productive pattern (Clusters 1 and 4). It is interesting to note that the first function explained 57.7% of the variance, which was highly loaded by group efficacy, followed successively by transformational leadership, group competence and team work engagement. That is, groups with the happy-productive pattern (Cluster 1) have higher levels on group efficacy, transformational leadership, group competence and team work engagement, compared to the unhappy-unproductive pattern (Cluster 4).

The second function maximally separates the unhappy-productive pattern from the happy-unproductive pattern (Clusters 2 and 3). In addition, the second function explained 38.6% of the variance, which was highly loaded by team work engagement, followed successively by transformational leadership, and, in an opposite direction loaded by group competence and group efficacy. That is, groups with the happy-unproductive pattern (Cluster 2) have higher levels on team work engagement and transformational leadership, but lower levels on group competence and group efficacy, compared to the unhappy-productive pattern (Cluster 3).

Finally, the third function maximally separates the happy-productive pattern from the happy-unproductive pattern (Clusters 1 and 2). The third function, modestly explained 3.7% of the variance, which was highly loaded by group competence and transformational leadership, and in an opposite direction loaded by group efficacy and team work engagement. That is, groups with the happy-productive pattern (Cluster 1) have higher levels on group competence and transformational leadership, but lower

levels group efficacy and team work engagement, compared to the happy-unproductive pattern (Cluster 2).

In conclusion, the finding supported our hypothesis 2. About hypothesis 3 and 4, data indicate that emotional resources refer to team work engagement and transformational leadership, whereas cognitive resources refer to group competence and group efficacy. Thus, results also supported our hypothesis 3 and 4.

Table 3.

Discriminant analysis of the four patterns of relations between group positive affect and group job performance.

Variable/discriminant function stadistics	Means (standard deviations)				Standardized discriminant function coefficients		
	Cluster 1 Happy-Productive Group (N=115)	Cluster 2 Happy-Unproductive Group (N=86)	Cluster 3 Unhappy-Productive Group (N=62)	Cluster 4 Unhappy-Unproductive Group (N=167)	Function 1	Function 2	Function 3
Control variables							
Economic sector	1.32(.51)	1.24(.57)	1.45(.62)	1.34(.60)			
Organizacional size	5.38(4.11)	4.47(4.56)	4.06(2.35)	54.87(49.41)			
Group size	43.98(37.32)	48.75(43.6)	39.68(33.26)	6.34(5.08)	-.06	.22	.84
Discriminant variables							
Team work engagement	4.63(.46)	4.78(.41)	4.05(.58)	4.25(.49)	.29	.62	-.26
Transformational leadership	4.41(.68)	4.39(.71)	3.51(.86)	3.68(.80)	.35	.39	.38
Group efficacy	5.24(.92)	4.66(.93)	5.19(.96)	3.96(1.04)	.56	-.31	-.30
Group competence	5.07(.78)	4.36(.96)	5.07(.83)	4.07(.91)	.32	-.44	.47
Significance of function					.000	.000	.005
Canonical correlation					.59	.50	.18
Explained variance (%)					57.7	38.6	3.7
Centroids of:							
Cluster 1					.86	.00	.19
Cluster 2					.36	.68	-.27
Cluster 3					.08	-1.25	-.18
Cluster 4					-.81	.11	.07

Discussion

The present study contributes to and extends the literature on the happy-productive group by analysing the relationship between group positive affect and group job performance, in addition to exploring some emotional and cognitive resources that help to understand this relationship.

The results supported our hypothesis 1. Specifically, as at the individual level, four patterns of relationships between group positive affect and group job performance were found: 1) happy-productive group, 2) happy-unproductive group, 3) unhappy-productive group, and 4) unhappy-unproductive group (Figure 1).

We confirm hypothesis 2 (i.e., 2a, 2b, 2c, 2d), indicating that transformational leadership, team work engagement, group efficacy, and group competence differentiate between the happy-productive and unhappy-unproductive pattern. Specifically, happy-productive groups show high levels on all the variables previously mentioned.

With regard to happy-unproductive groups, they present high levels of team work engagement and transformational leadership, partially confirming hypothesis 3. Contrary to our expectations, although happy-unproductive groups were managed with transformational leadership, their performance turned out to be poor. According to Lin, Scott, and Matta (2018), transformational leaders who coordinate non-competent employees show greater emotional exhaustion, which could suggest that transformational leaders are more focused on inspiring employees and enhancing group wellbeing than on achieving high levels of group job performance.

Unhappy-productive groups display the opposite pattern from happy-productive groups, that is, high levels of cognitive resources (i.e., group competence and group efficacy). As proposed, hypothesis 3 is confirmed, but special attention must be paid to the effect of leadership on unhappy-productive groups. As Koval, van Dellen,

Fitzsimons, and Ranby, (2015) noted, people expect higher performance from highly self-controlled employees. Therefore, employees and groups with high self-control may not adequately value leaders who consecutively increase tasks but do not reward them equitably, thus taking advantage of them.

Finally, although discriminant analysis revealed a third function not considered in the hypotheses, the results were unexpected but promising. Happy-unproductive groups have lower levels of group competence and transformational leadership, but higher levels of group efficacy and team work engagement, compared to happy-productive groups. Based on the non-monotonic effect (Grant et al., 2011), we hypothesise that happy-unproductive groups are immersed in an excessively pleasant state (i.e., high levels of group efficacy and team work engagement), which is reinforced among group members through affective linkage mechanisms (Peñalver et al., 2017), building a single vision of reality (George et al., 2007). These groups only accept ideas that support the group, submerging them in a climate of complacency and a disproportionate belief in their competences. Moreover, happy-unproductive groups might not have appropriate regulation mechanisms (such as transformational leadership) that provide feedback about their performance in order to readjust expectations and manage their emotional states.

Theoretical Contributions

This paper makes a number of contributions to the happy-productive group research in several ways. First, it expands the happy-productive worker thesis to the group level, that is, the happy-productive group. The results enrich the construct of the happy-productive group by showing an isomorphic psychosocial process where happy groups (i.e. group members share group positive affect) are productive because they

develop emotional and cognitive resources. Second, it provides additional evidence about the relationship between group positive affect and group job performance. Specifically, feeling high levels of positive affect had been considered a good feature, but recent studies have found that, under certain conditions, it can produce negative outcomes (Tsai, et al., 2011). The present study might be valued as one of the first steps in confirming these findings at the group level; that is, there are groups with high levels of positive affect and low job performance (i.e., happy-unproductive group), as well as groups with low levels of positive affect and high job performance (i.e., unhappy-productive group). Finally, Peiro et al. (2014) suggested the need to study the dark patterns (i.e., unhappy-unproductive, unhappy-productive, and happy-unproductive pattern) more in-depth. We have identified four variables (i.e., transformational leadership, team work engagement, group competence, group efficacy) that explain the development of these unhealthy patterns.

In addition, the findings provide preliminary answers to some questions about the "limits of positivity". For example, it was considered that high levels of group efficacy beliefs could lead to low levels of job performance in situations of learning, innovation, and risk (Salanova, Lorente, & Martínez, 2012). Nevertheless, the results of this study are added to the limited literature that addresses the circumstances where effectiveness does not harm performance. High levels of group efficacy and group competences seem to be a good combination in terms of performance (unhappy-productive), as opposed to high levels of group efficacy and team work engagement (happy-unproductive).

Practical Implications

In terms of practical implications, our research promotes several empirically-based human resources strategies related to recruitment and group design, in order to promote happy-productive groups. Recruitment is the first step in choosing employees who would fit well within a group. Therefore, organizations should analyse the strengths and weaknesses of both employees and groups to find a balance. With regard to group design, as previous authors suggested, organizations could design the groups by trying to understand employees' characteristics, group tasks, and the type of group (Morgeson, & Humphrey, 2008; Oldham, & Hackman, 2010).

In addition, following a prevention perspective, our results encourage organizations to initiate evaluation and monitoring programs related to satisfying the needs, resources, and competencies required to do a great job. First, the data suggest an interesting but worrisome situation in organizations due to the proportions of each pattern (i.e., happy-productive 26.74%; happy-unproductive 20%; unhappy-productive 14.42%; unhappy-unproductive 38.84%). Moreover, paying exclusive attention to group job performance has been shown to be an inadequate strategy for achieving a healthy pattern.

Finally, as far as we know, both academics and practitioners have focused on the value of enhancing strengths such as work engagement. However, several authors (Bakker, et al., 2011; Grant, et al, 2011) mention that excessive levels of engagement and strengths could make them less beneficial than they seem. Thus, the present study establishes a hopeful direction for positive interventions designed to promote happy-productive groups by proposing that reducing weaknesses could be a better strategy than excessively boosting strengths.

Limitations and Future Research

One of the possible limitations of this study could be the use of a convenience sample, which might restrict the generalizability of these findings. However, the sample is heterogeneous because it incorporates different occupations, organizations, and sources of information (i.e., employees, supervisors). Considering that the perception of needs or demands can be different depending on the job (Crawford, LePine, & Rich, 2010), future studies should control the occupational groups in order to validate the four patterns in randomly selected samples.

Second, according to several authors, the time factor should have been considered in this study because it is crucial for studying the dynamic nature of affect in groups in an organizational environment (Knight, 2015; Wright, 1997). For instance, Kozusznik, Rodríguez and Peiró (2015), in a 6-month time-lag field study, identified eight types of development of group climate wellbeing over time. Interestingly, although only three types of changes showed an impact on the employees' wellbeing (i.e., engagement, burnout), two of them had a negative influence.

Third, although our research focused on identifying group variables that discriminate among the different group wellbeing patterns, future studies should consider mechanisms that lead the group to their own self-regulation by developing new competences, combining efforts to increase job resources, and decreasing job demands, that is, investigating how to craft the group job (Tims, Bakker, Derks, Van Rhenen, 2013). For instance, different types of employee wellbeing have shown relationships with different behaviours for optimising the job (i.e., job crafting; Hakanen, Peeters, & Schaufeli, 2018). Therefore, we suggest that different types of group wellbeing (e.g., happy-productive group) and group lack of wellbeing (e.g., unhappy-productive group) might be related to different strategies for crafting group jobs (i.e., team job crafting).

Fourth, two types of performance (i.e., in-role, extra-role) have been evaluated in order to contemplate a full picture of performance (Rafferty et al., 2004). However, Collins et al. (2015) recently warned that in-role performance and creative performance might not follow identical processes. In other words, different types of performance could require different resources to satisfy them. Therefore, the results obtained in this study could be different for different types of outcomes.

Finally, in order to move forward in the happiness research, authors such as Decy and Ryan (2006) recommend evaluating happiness as encompassing two related traditions, that is, hedonistic (i.e., defined as the manifestation of positive affect and the lack of negative affect) and eudaimonic (i.e., defined as the search for a satisfying and complete life that is achieved through a goal) traditions. In the present study, although we have analysed both positive affect (hedonistic) and work engagement (hedonistic), we have only examined a limited view of happiness.

Final Note

This study adds to the growing literature on happy-productive groups. It advances the knowledge in this area because it examines the relationship between group positive emotions and group job performance. In addition, it provides not only a classification, but also information on those variables that discriminate between the different patterns. The main strength of this study is the use of supervisors' ratings to assess group job performance. The findings indicate that happy groups are also productive groups when they are able to develop aspects related to emotional and cognitive dynamics.

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CHAPTER 6

General Conclusions

The main purpose of the present dissertation is to advance our current comprehension of group positive affect research by suggesting theoretical and empirical evidence. To accomplish this, the dissertation is composed of one theoretical chapter (Chapter 2) and three empirical studies (Chapters 3 to 5).

The theoretical chapter aims to analyse the literature in order to critically review empirical research on group positive affect and synthesise the findings to advance the understanding of this construct. Briefly, the conclusions of the review can be summarized in four points. First, despite its limitations (e.g., assessing adjectives not considered emotions, measuring mainly highly activated emotions), the PANAS instrument is the most widely used instrument in group positive affect research. Moreover, the variety of terms to refer to the same construct (i.e., group positive affect) is alarming. Second, the outcomes of group positive affect have been analysed in greater depth than their antecedents. With the exception of studies focused on diversity, similarity, and leadership, the rest of the antecedents do not seem to follow a systematic order based on clear and strong theory. In addition, few studies place groups and group positive affect in the proper place within the organization through multilevel studies. Third, for researchers there has always been a growing interest in relating positive affect to performance at the group level of analysis. However, the present review reveals how little attention has been paid to the mechanisms that could approach the aforementioned relationship. Finally, the absolute advantageous effects of group positive affect have been questioned, suggesting that high levels of group positive affect could lead the group to perform inadequately. Although some investigations have analysed the effect

of some variables in particular, more studies are needed to better understand the reason for this anomalous pattern (i.e., happy-unproductive group pattern).

Taking into the account the conclusions of the theoretical chapter, the three empirical chapters were designed. Specifically, in order to test the hypotheses of these three empirical studies, different samples (i.e., university students from different degrees, small and medium-sized Spanish organizations from different economic sectors), different raters (i.e., group members, supervisor, experts), different levels of analysis (i.e., group, organization), and different statistical methods (i.e., Structural Equation Modelling, Hierarchical Linear Modelling, Cluster analysis, Discriminant analysis) have been used. Table 1 provides an overview of the main features of each empirical study.

As mentioned in Chapter 1, the dissertation addresses three fundamental challenges for research on group positive affect that are answered again below based on the results obtained in this dissertation. Finally, the practical implications of our results are discussed, followed by limitations and future research directions.

Table 1.

Overview of the main features of the empirical chapters

Chapter	Sample	Level addressed	Design	Statistical analyses	Variables
Chapter 2	Study 1: 112 small groups 112 leaders 3 experts Study 2: 417 teams 417 supervisors (129 organizations)	Team Level	Cross-sectional	Structural Equation Modelling	• Group Positive Affect • Group Social Resources • Creative Performance • In- & Extra- Role Performance
Chapter 3	432 groups 432 supervisor (116 organizations)	Organizational & Team Level	Cross-sectional	Hierarchical Linear Modelling	• Group Positive affect • Organizational Practices • Job Resources • Job Demands
Chapter 4	432 groups 432 supervisors (116 organizations)	Team Level	Cross-sectional	Cluster analysis & Discriminant analysis	• Group Positive affect • In- & Extra- Role Performance • Emotional Resources • Cognitive Resources

CHALLENGE 1. What is the relationship between group positive affect and group performance?

As the theoretical review (Chapter 2) showed, the relationship between group positive affect and group performance can be of two types: direct or indirect. Following the Broaden and Build Theory (Fredrickson, 1998, 2001), we noted that positive affect has an indirect effect on performance; that is, feeling positive affect does not necessary imply better performance. Positive affect broadens cognitive flexibility and opens people's minds, which allows them to perform different behaviours and attitudes. In the short term, people can benefit from some generated resources, making it easier to face issues. In the end, people achieve better performance, better wellbeing, and better health.

In Chapter 3, we proposed that, at the group level, one of the resources generated would be social. Group social resources (i.e., those aspects of group functioning that emerge from interpersonal dynamics among members; Oh, Chung, & Labianca, 2004) would be psychosocial mechanism that can explain how shared positive affect in groups is related to better group performance (Knight, & Eisenkraft, 2014). Specifically, when groups have high levels of positive affect, their members pay full attention to the goals, communicate better, and have stronger bonds and a higher support climate. These improvements in behaviours allow the group to achieve good in- and extra-role performance as well as creative performance. Additionally, the present investigation has made it possible to establish a parallelism between the individual level and the group level in several ways; first, by extending the Broaden and Build Theory of positive emotions to the group level; and second, by establishing the existence of the happy-productive group as an analogous phenomenon to the happy-productive worker. Despite the studies that address positive group emotions and group performance, so far

no author has considered that there might be an isomorphic model between the two levels, as well as the terminology in this relationship. Through two independent samples, we tested the fit of the proposed model. Although we have implemented different actions (i.e., two studies, alternative model, external rates) to increase the validity to our research, we are aware of the limitations of cross-sectional designs.

CHALLENGE 2. What are the organizational antecedents of group positive affect?

The second challenge was answered through Chapter 4, whose objective was to reveal which organizational resources could be antecedents of group positive affect. The main focus of group positive affect research has been on understanding the benefits of group positive affect, that is, the consequences. Thus, with few exceptions, the study of the antecedents has been analysed less. Drawing on Job Demands-Resources Theory (Bakker and Demerouti, (2017), we proposed that team job resources stimulate group members to increase group positive affect, whereas team job demands can reduce group wellbeing. Several team job resources (i.e., transformational leadership, autonomy, feedback) and team job demands (i.e., quantitative overload, role conflict, role ambiguity) were tested, in order to determine the true predictive value of each antecedent. However, only transformational leadership, feedback, and quantitative overload showed significant relationships with group positive affect. Moreover, considering that organizations are multilevel structures that require a multilevel approach (González-Romá, & Hernández, 2017), the antecedents identified should belong to the multiple levels of organizations (i.e., organizational, group). For this reason, we proposed that human resources practices, as an organizational resource, would be positively related to group positive affect. As expected, human resources

practices are also positively related to group positive affect. Thanks to this study, we are aware of which antecedents really have the capacity to change group positive experiences, thus avoiding wasting time and effort on something that is not going to produce enriching effects.

CHALLENGE 3. Under what circumstances do high levels of group positive affect lead to low levels of group performance?

The third challenge was answered through Chapter 5. At the individual level, Peiró and colleagues (Peiró, Ayala, Tordera, Lorente, & Rodríguez, 2014; Peiró, Kozusznik, Rodríguez-Molina, & Tordera, 2019) noted that previous research focused on the "bright side" of the positive affect and performance relationship, also called the happy-productive thesis. This biased research has led to an inconclusive view of this relationship. Specifically, findings on the beneficial effect of positive affect on performance do not contemplate how an excess of positive affect could be detrimental to performance (Grant, & Schwartz, 2011). At the group level of analysis, the same need was detected. In order to fill this gap, first, different group positive affect-group performance patterns were explored, concluding that four patterns existed (i.e., happy-productive, happy-unproductive, unhappy-productive, unhappy-unproductive). Second, we aimed to understand the differences between these four patterns by suggesting four variables: transformational leadership, team work engagement, group efficacy, and group competence. As we expected, the happy-productive pattern showed high levels of all the variables, whereas the unhappy-unproductive pattern showed low levels. However, results also showed that the happy-unproductive pattern was characterized by deficiencies in cognitive resources (i.e., group efficacy, group competence), whereas the unhappy-productive pattern was characterized by deficiencies in emotional resources

(i.e., transformational leadership, team work engagement). Based on George and King (2007), positive states experienced collectively build a single-shared reality, leading to a tendency in workers to inhibit viewpoints that are misaligned with the group thinking. Therefore, groups with high levels of team work engagement and leaders focused on group wellbeing could produce poor performance.

Practical implications

This dissertation proposes several implications for practitioners to guide their work in the field of group positive affect. First, organizations should promote healthy leadership as a way of influencing group positive affect. Transformational leaders motivate and intellectually stimulate their followers, encourage pride, trigger enthusiasm, and transmit optimism (Cruz-Ortiz, 2017).

Second, when group wellbeing and group performance decline, organizations should evaluate whether the balance between team resources and demands is adequate, in order to propose a job design. As Morgeson and Humphrey (2008) noted, groups may be designed by understanding how employees' characteristics (e.g., diversity, role) impact the group. A complementary vision to the job design is suggested by team job crafting. Groups are not passive entities when they confront work goals, and so team members together can decide how to develop new skills, combining their efforts to increase team resources and decrease team demands, in order to improve team performance through team work engagement (Mäkikangas, Bakker, & Schaufeli, 2017; Tims, Bakker, Derks, van Rhenen, 2013).

Finally, following a non-monotonic inverted-U-shaped effect (Grant, & Schwartz, 2011), organizations should pay more attention to enhancing strengths

excessively, leaving aside the areas of improvement. As results have shown, an excessive level of work engagement may be less beneficial than it seems.

Limitations and research directions

The present dissertation has several limitations. A first limitation is that a non-probabilistic sample (i.e., convenience) was used, which might restrict the generalizability of these findings. However, the sample is heterogeneous because it includes different groups from different companies with different sources of information (i.e., employees, supervisors), which allows us to obtain a view of the reality of the organization.

Second, some data were obtained from self-report measures (e.g., group positive affect, group social resources, team resources, team work engagement), which might have caused common method bias. However, given the nature of this study, which includes psychological experiences like the aforementioned, it is difficult to use objective data. In order to reduce the threat to the validity of our study (e.g., common method variance), several steps were implemented, such as external raters (i.e., supervisors, leaders, evaluators) and different types of scales (e.g., faces, Likert).

Third, the data are cross-sectional. Although alternative models were proposed in order to provide some information about the possible direction of the relationships, cross-sectional study designs do not allow us to draw firm conclusions about the causal ordering among the variables studied. Thus, future research should focus on developing longitudinal studies with experimental designs in order to uncover the causal order among the study variables.

Finally, in order to take a step forward in happiness research, authors such as Decy and Ryan (2006) recommend evaluating happiness as encompassing two related

traditions, that is, the hedonistic (i.e., defined as the manifestation of positive affect and the lack of negative affect) and eudaimonic (i.e., defined as the search for a satisfying and complete life that is achieved through a goal) traditions. In the present study, although we have analysed both positive affect (hedonistic) and work engagement (hedonistic), we consider that we have examined a limited view of happiness.

In closing, although several recommendations for future research directions have been presented above, some additional issues that demand future attention are suggested below:

- What other group resources can be expanded by group positive affect? What other underlying mechanisms can help to explain the mediated relationship between group positive affect and group performance?
- Considering the characteristics of affect, it is crucial to study the group positive affective dynamic in order to fully understand the most critical moments for groups.
- What effect does belonging to one employer or another happy-productive group pattern have on members?
- To what extent can groups self-regulate their levels of positive affect in order to avoid reaching levels that are excessively high, thus causing poor performance?
- Can transformational leadership be disadvantageous to team performance if supervisors care too much about group wellbeing? Can excessively high levels of engagement be related to inadequate levels of transformational leadership?
- Although we have focused on studying the homogeneity of group positive emotions, George, and King (2007) emphasize that it has certain

disadvantages in some circumstances. In what circumstances is it advantageous to develop homogeneity? And heterogeneity?

- At first, diversity was shown to hinder shared positive affect. However, depending on the task, the group could benefit from this diversity. Thus, what effects could age diversity and gender diversity have on the happy-productive group pattern in the long-term?

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SUMMARY

The main purpose of the present dissertation is to provide added value to group positive affect research, advancing its understanding through theoretical and empirical evidence. This aim has been operationalized in three different research challenges:

Challenge 1. What is the relationship between group positive affect and group performance?

Challenge 2. What are the organizational antecedents of group positive affect?

Challenge 3. Under what circumstances do high levels of group positive affect lead to low levels of group performance?

In order to address the aforementioned challenges in group positive affect research, this dissertation is composed of six chapters. Opening the dissertation, an integrative review of the group positive affect research is presented (Chapter 2). Later, three empirical studies (Chapters 3, 4 and 5) examine the relationship between group positive affect and its consequences (i.e., group performance, Chapter 3) and antecedents (i.e., organizational antecedents, Chapter 4). Specifically, Chapter 5 sheds light on anomalous patterns, that is, when group positive affect is not related to group performance. All these chapters are framed by a general introduction (Chapter 1) and general conclusions (Chapter 6).

With regard to the method, different samples (i.e., university students from different degrees, small and medium-sized Spanish organizations from different economic sectors), different raters (i.e., group members, supervisor, experts), different level of analysis (i.e., group, organization), and different statistical methods (i.e., Structural Equation Modelling, Hierarchical Linear Modelling, Cluster analysis, Discriminant analysis) have been used. Finally, the practical implications of our results are discussed, followed by limitations and future research directions.

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