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Social interaction matters to job search over the long haul

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Abstract

Based on social cognitive, reasoned action, and basic needs theories, this study examines whether co-rumination with others about the job search mediates the positive relation between state negative affect and job search intentions. In addition, we looked at how this positive indirect effect interacts with the social support received from different sources (such as friends, family, and significant others) at the beginning and six months after the initial job search process. Using a sample of 87 graduates (job seekers) from a Portuguese masters program, we used multilevel modeling to test this moderated mediation. Ages ranged from 22 to 53 years old ($M = 29.45$; $SD = 7.60$). Data were collected using measures to assess negative affect, co-rumination, perceived social support, and job search intentions. We found an indirect effect of state negative affect on job search intentions; when job seekers perceive higher levels of social support from significant others at the beginning of the job search, the positive, mediating role of co-rumination in this relationship is increased. Further, for a sub-sample of six-month job seekers, this positive indirect effect increased when there was also an increased perception of social support from family. Discussion focuses on implications for theory and practice and the role of co-rumination for unemployed people during job search.

Keywords Job search intentions · Co-rumination · Social support · State negative affect

Introduction

Job search is a key employment issue, with millions of individuals seeking employment each year (Wanberg et al., 2020). Moreover, employment is crucial not only for financial support purposes (i.e., to earn money, a wage) but also because employment provides meaning, along with a sense of self-worth, social involvement, increases social status, promotes social identity, personal development, and career growth (van Hooft et al., 2021). Therefore, the absence of employment leads people to *co-ruminate* on the subject; that is, to extensively discuss their own job search problem repeatedly with another person and revisit problems, speculate about problems, and focus on negative feelings (Miller et al., 2020). However, there are gaps in the job search literature that limit our understanding of the job search process. First, the job search literature has generally focused on the individual (e.g., Liu, Wang et al., 2014; Yu & Davis, 2019) or on the socio-contextual (e.g., Lopez-Kidwell et al., 2013) domains separately. This is unfortunate given the complexity and dynamics of the actual job search process (Barber et al., 1994). To address this, the present research examines the roles of an individual variable, negative affect, as well as

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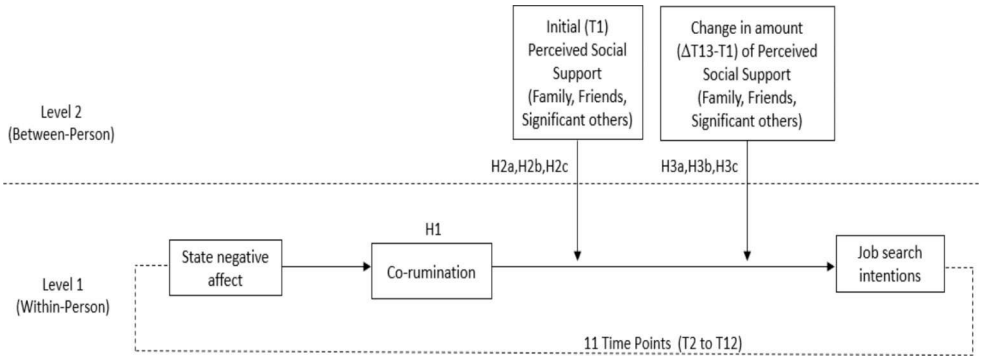
Fig. 1 Conceptual model



two socio-contextual variables, co-rumination about the job search and social support from different sources, for their effects on job search intentions.

Second, because social support plays a key role in the effectiveness of job search interventions (Liu Huang & Wang, 2014), there is a need to understand the value of different sources of social support to job search (Watkins et al., 2012). Drawing on basic-needs theory (Ryan & Deci, 2000), the present research posits that perceived social support from different sources – family, friends, and significant others – each provides basic needs to individuals to create a favorable context. Supported by the above-mentioned theoretical assumptions, social support moderates the positive indirect relationship between state negative affect and job search intentions through co-rumination (see Fig. 1), and that these different sources of social support may matter at different points in the job search.

Third, the role of positive and negative affect in job search is unclear, as well as how they each play out over time. During the job search process, individuals may experience fluctuations in positive and negative affect (Yu & Davis, 2019). However, most of the current job search literature only studies between-person effects, finding that low negative trait affect and high positive trait affect lead to more successful job search outcomes (Turban et al., 2013). In particular, the role of negative affect is unclear, as some studies have not found a detrimental relationship between trait negative affect and job search outcomes (Côté et al., 2006). Thus, there has been a call (e.g., Motta Veiga et al., 2020) to reconcile these literatures to understand the dynamic role of negative affect within job seekers over the long haul.

The present study will address these gaps. Using a sample of 87 job seekers over a six-month period and 11 time points, we examined the roles of negative affect, co-rumination with others focused on job search, and the timing and sources of social support in job search intentions (see Fig. 1). Specifically, we examined within-person and between-person effects to understand how negative affect can positively relate to job search intentions through co-rumination, which we conceptualize as a positive social coping strategy. We also examined whether social support from three sources – friends, family, and significant others – moderates these effects, and whether these sources of social support are differentially important at different time points during job search.

Literature Review

Social learning theory suggests that individuals imitate and learn specific behaviors by observing others. Throughout that time, co-ruminating in dyads about job search problems may help job seekers to cope with the frustration (i.e., negative affects) of unemployment and at the same time to increase job search intentions (Kreemers et al., 2018). Therefore, we developed a conceptual framework that suggests that social support has a role in meeting the basic needs of autonomy, competence, and relatedness. These in turn lead to increased intrinsic motivation and a range positive work outcomes.

Co-Rumination and job search intentions

Our focus in this study is the role of co-rumination between job seekers and others about the job search. Social cognitive theory (Bandura, 1986) suggests that individuals learn and change their attitudes and behavior by observing, modelling, and interacting with other individuals. Thus, co-rumination in dyads may prompt a social adaptive coping process that can help people put state negative affect (attributed to frustrating job search experiences) into a broader perspective (Haggard et al., 2017). From a social cognitive perspective, individuals are agents, that is, products and producers of their surrounding environment (Bandura, 2001). Accordingly, as agents, individuals form intentions (intentionality), establish goals and future-directed plans (forethought), take diverse courses of action through motivation and self-regulation (self-reactiveness), and self-examine their own functioning (self-reflectiveness). Accordingly, they can engage in individual agency, proxy agency, and collective agency, a dynamic interplay of individual, behavioral, and contextual variables. Specifically, *individual agency* pertains

to the influence one has on his/her own life, *proxy agency* refers to others helping the individual reach his/her goals, and *collective agency* implies a socially coordinated and interdependent effort and efficacy to reach shared goals. Co-rumination with other job seekers falls within the category of proxy agency, whereby an individual acts on the advice of another to help reach a specific individual goal (in this case, employment).

Moreover, we conceptualize co-rumination as positive relational behavior that allows job seekers to deal with adversities and undesirable events, such as the negative affect they experience as a result of a failed job search (Harzer & Ruch, 2015). Therefore, in the present study, co-rumination consists of discussing one's own job search problem repeatedly with another person or vice versa (i.e., in contrast to individual rumination by a person; Rose, 2002). However, co-rumination with others is not necessarily beneficial (cf., Felton et al., 2019). For example, one study found that co-rumination increases individual rumination through the continuous reinforcement of intraindividual maladaptive thinking styles. This in turn predicted increases in negative outcomes such as depression (Stone & Gibb, 2015). Thus, the question is under what circumstances is co-rumination helpful or harmful.

Previous studies have found that support from significant others, family members, friends, or other trusted people who show genuine concern is critical to diminishing negative feelings associated with job search experiences including frustration (Liu, Wang et al., 2014). Thus, social support plays an important role by allowing individuals to build relationships and reduce the impact of stressful experiences (Boren, 2014). The results reported in the existing literature (e.g., Rees & Freeman, 2007) show that social support moderates the relationship between stress and self-confidence, even in situations in which individuals experience high levels of stress. Thus, the current study sought to understand whether perceived social support can play a moderating role, increasing the effects of co-rumination on the indirect relationship between negative affect and job search intentions.

Based on these previous studies (Felton et al., 2019), we argue that in the absence of strong social support, co-rumination may lead people to ruminate and internalize negative ideas and symptoms that trigger a spiral of negative affect (Miller et al., 2020). Accordingly, this rumination may engender negative attitudes and beliefs if solutions are not found and job seeking becomes a prolonged process; according to the theory of reasoned action (Fishbein & Ajzein, 1975), this negative affect will reduce the behavioral intention to find a job. Because the theory of reasoned action validates job search intentions as an important job search behavior/experience (Fort et al., 2015), we include it as the primary outcome variable of this study.

The role of social support

In addition, basic-needs theory (Ryan & Deci, 2000) explains that individuals have three basic needs – autonomy, relatedness, and competence – that lead to increased levels of intrinsic motivation. These needs are socio-cognitive in nature: They are individual (autonomy), contextual (relatedness), and behavioral (competence; Bandura, 2006), and they may influence each other. In the current study, we posit that the social support from different sources is important for job seekers to achieve these basic needs, and that this social support facilitates the positive role of co-rumination in increasing job search intentions. While searching for a job, recent graduates develop moments of negative affect, which requires the development of coping mechanisms that allow them to deal with frustrations of job unemployment (Boren, 2014). Thus, they often turn to the support of family, friends, and significant others. Note that co-rumination and social support are different constructs. Social support includes general expressions of positive affect/sympathy and concern from others. In contrast, co-rumination is more task-oriented, focusing on the discussion of a specific problem and the best way to solve it (Rose et al., 2014). Put differently, co-rumination includes working in a dyad to understand a problem, its causes, and its solution. Relevant to the present research, studies by Miller et al. (2020) note that positive social support moderates the relationship between co-rumination and negative experiences that cause stress, such that co-rumination without positive social support can be dangerous. The presence of social support can help solve a problem from an affective standpoint, whereas co-rumination alone may tend to focus only on the problem/task itself (Kong et al., 2019). In short, social support is the "secret ingredient" that makes co-rumination effective in the job search.

In the current study, we argue that job search is a dynamic process wherein individuals can experience positive and negative affect fluctuations. Therefore, in line with previous studies on the dynamics of co-rumination (Jose et al., 2012), we examine within-person fluctuations over a period of six-months of job search activity. In line with the basic-needs theory (Ryan & Deci, 2000), we also posit that as the job search process continues over time, frustrations increase, and therefore more basic needs (e.g., autonomy, relatedness, and competence) are required. Therefore, because long-term job seekers experience higher pressure due to unemployment (Lopez-Kidwell et al., 2013), they will benefit from increased social support over time. We thus argue that increased perceptions of social support will lead to healthy

co-rumination (i.e., a coping mechanism for job search contexts), to transform negative affect into job search intentions (see Fig. 1).

Negative affect and job search intentions

Negative affect alert individuals to dangers and make job seekers actively reflect on their past actions so that they can adjust their behavior (Forgas, 2013). Negative affect can be conceptualized as a trait (e.g., Turban et al., 2013) that is stable over time or as an unstable state that can change due to external variables. The literature has shown that job-related stressors have a stronger effect on state negative affect than on trait affect (Spector et al., 2000). Thus, it is surprising that most studies in the job search literature – a very dynamic process – focus on trait negative affect (Motta Veiga et al., 2020) rather than within-subject state negative affect. Thus, to fill this gap in the literature and to complement previous research on trait negative emotion, this study will consider state negative affect as a within-subject variable that predicts job search intentions.

The success of a job search depends on processes that allow individuals to cope with the frustrations and stresses of negative job search outcomes (Turban et al., 2013). Continued failure in achieving their goals (e.g., frustrating experiences in a job search) tends to lead to increased negative affect (Moberly & Watkins, 2010). According to social cognitive theory (Bandura, 1986), individual, contextual, and behavioral variables interact and influence human behavior. Hence, individuals adapt their behavior as they observe and interact with others in different contexts and situations. In the context of unemployment, interacting with others may help individuals find solutions and strategies to cope with frustrations. Thus, in the current study, we conceptualize that co-rumination could be positive or negative, but is only positive if it is combined with social support.

Co-rumination as a mediator between State negative affect and job search intentions

Coping theories (Lazarus & Folkman, 1984) state that when individuals perceive that they must deal with uncertainty and tasks that diminish their perceived resources, they will first evaluate their situation as harmful or challenging. They will then choose among different coping strategies to deal with these potentially stressful events. These theoretical assumptions about coping have implications for job seekers (Liu et al., 2014a). Based on the theory of reasoned action (Fishbein & Ajzein, 1975), we believe that repeated conversations in dyads (co-rumination) may act as a coping mechanism, changing the negative attitudes toward the unemployment situations. Moreover, while co-ruminating about unemployment, individuals may change their beliefs about several job search activities. Accordingly, job seekers can internalize social pressure to perform and thus develop stronger job search intentions, while developing social coping strategies such as co-rumination, which can lead to increased effort to engage in job search behavior (Fort et al., 2015). This allows people to restructure their negative attitudes and the environmental conditions (i.e., through more social pressure), putting job search problems into a broader perspective, thus increasing job search intentions.

Although researchers have studied the relationship between trait negative affect and job search outcomes (e.g., Turban et al., 2013), these studies failed to identify a consistent and coherent path that explains this relationship (e.g., Côté et al., 2006). A possible reason for some inconsistency in the literature is that the link between negative affect and job search processes may be mediated by the social coping strategies (e.g., co-rumination) used to cope with the process of finding a job. For instance, negative affect may lead to having repeated discussions about job search behavior, thus reducing procrastination and increasing job search intensity (Haggard et al., 2017). Despite this empirical evidence, one question remains: Is co-rumination about job search a missing link that explains how negative affect may lead to increased job search intentions?

We argue that co-rumination as a social coping strategy is the missing link in past research that has found a zero or positive relationship between state negative affect and job search. Motta Veiga et al. (2020) point out the importance of affect activation (i.e., energy and motivation). Accordingly, the co-rumination process and the opportunity to discuss problems in dyads exerts a very important motivational function in job search intentions (Fort et al., 2015). This proxy agency, where one of the individuals helps the other engage in job searching, becomes an opportunity to reflect and establish strategies to reach goals, which in this case, is finding a job (Bandura, 2001). Therefore, we hypothesize that when individuals with negative affect make an effort to approach others to discuss their problems, negative affect may actually appear to be positively correlated with co-rumination. In fact, negative affect can motivate individuals for positive change (Kashdan & Biswas-Diener, 2014) and increase creativity (Costa et al., 2018). It also enables high levels of awareness about potential threats and reflection about past actions (Forgas, 2013). According to the socio-cognitive theory, this is a very self-regulatory process, where individuals engage in forethought and establish action plans, execute those plans, and self-reflect on their past actions to improve in subsequent efforts (Bandura, 2006). All of these processes can be co-regulated (i.e., proxy agency) through co-rumination. To our knowledge, this intermediate role of

co-rumination in the job search process has received little attention despite its clear relevance.

The effect of social support

Empirical evidence has suggested that co-rumination is not always linked to positive individual outcomes (Felton et al., 2019). For example, there is evidence that co-rumination may be a mechanism of stress that reduces friendship quality (McLaughlin & Nolen-Hoeksema, 2012). However, when co-rumination occurs in dyads with high-quality relationships, co-rumination is not associated with depressive symptoms (Moreira et al., 2016). In other words, in contexts of high-quality relationships (vs. low-quality relationships), co-rumination becomes more beneficial to obtain positive outcomes such as job search intentions. In fact, high levels of social support help reduce maladaptive coping (Wang et al., 2013). That is, job seekers may be less likely to transform co-rumination into negative outcomes (e.g., depression) when they perceive high levels of social support.

In line with basic-needs theory (Ryan & Deci, 2000) and the theory of reasoned action (Fishbein & Ajzein, 1975), individuals with high social support and with opportunities to co-ruminate about problems may be more likely to achieve positive basic needs and change their negative attitudes and beliefs in order to develop effective job search intentions in the long haul of job searching. This is consistent with social cognitive theory which indicates that individuals are both producers and products of the social environment that surrounds them (Bandura, 2006). Thus, initial levels of social support may positively reinforce the future effects of co-rumination in the dynamic relationship between negative affect and job search intentions because it provides individuals with a sense of competence, autonomy, relatedness (cf., Ryan & Deci, 2000), and facilitates their psychological and social functioning (Van den Broeck et al., 2016). Although co-rumination and social support include social interactions, both should be considered distinct constructs. While co-rumination is normally centered around solving problems (e.g., unemployment, job search frustrations), social support involves positive emotional support (Boren, 2014). Social support appears as a socio-contextual variable that, as in other studies, moderates the strength of the relationships between coping strategies and individual outcomes (Kiral et al., 2017).

In addition, as a response to calls in the literature (Jolly et al., 2021), we explore how different sources of social support interact with job seekers' social coping strategies (co-rumination) and whether they have differential effects at different points over a subsequent six-month job search process. We examined whether the mediating effect of co-rumination across the 11 time points (six months; T2 to T12) could have a stronger influence on job search intentions in situations of initial greater perceptions of social support than in situations with less perceived support. Although the moderator of initial social support was studied at the between-persons level (T1), a repeated measures design (11 time points during six months) allowed us to consider the dynamics of the positive indirect effect of negative affect (state) on job search intentions (through co-rumination).

Because job search is a long and dynamic process, we believe that social support received will change over the job search process. Following the previous theoretical assumptions (which only considered social support at the beginning of the job search), it is expected that sub-samples of long-term job seekers, who perceive an increase in the amount of social support during the job search process (T13-T1; six months), will benefit from this increase.

There are different stages of the job search process. As argued by Lopez-Kidwell et al. (2013), job seekers start with low pressure and high uncertainty, but move at later stages to high pressure and lower uncertainty. Specifically, advice and information are important cues at early phases, and encouragement appears to be critical at later stages of the job search process (Kanfer et al., 2001). Complementary empirical evidence has shown that job seekers move from formal sources (e.g., university placement offices, advertisements) to informal sources (e.g., friends and relatives) and that this process is more intensive in later phases of job search (Barber et al., 1994). However, these studies did not address the role that different sources of social support may have in different stages of the job search process. Therefore, another contribution of the current study is to explore how increased social support from different sources (T13-T1), across 11 time points (six months; T2 to T12), affects the positive indirect relationship between state negative affect and job search intentions through the role of co-rumination.

The longer unemployed university graduates search for jobs, the less effort they put into job search processes (Lopez-Kidwell et al., 2013), essentially because they perceive a reduced sense of self-efficacy in terms of finding jobs (Yizhong et al., 2017). Self-efficacy is an important individual variable from a socio-cognitive perspective, as it determines adaptation and change and is individuals' belief of their own capacity to reach goals (Bandura, 2001). Over time, recent graduates also might receive more input and questions from parents, significant others, or former university colleagues about their unemployment status (Watkins et al., 2012). This increased time pressure and job search uncertainty motivates young job searchers to feel a higher sense of urgency to strengthen their sources of support and reinforce their coping strategies. The basic-needs theory (Ryan & Deci, 2000) explains that individuals who perceive increased social support receive basic needs (e.g., such as

autonomy, self-esteem, competence) which through the job search process will benefit the co-rumination process. In fact, long-term job seekers tend to perceive higher social pressure due to unemployment (Lopez-Kidwell et al., 2013), which according to the theory of reasoned action (Fishbein & Ajzein, 1975) may negatively change their subjective norms or the perception of relevant group members. Without an increase in social support, co-rumination in dyads may lead to passive and maladaptive approaches to problem solving if goals are not met (Felton et al., 2019). From a socio-cognitive stance, this cyclical and dynamic interplay between the individual, contextual, and behavioral variables may influence co-rumination (proxy agency) negatively or positively, which in turn, may lead to different outcomes (Bandura, 2006). Accordingly, co-rumination without adaptive self-reflection of negative past experiences/performances and social support, may lead to negative attitudes and inadequate subjective norms and therefore, reduce job search intentions. Hence, we examine the mediating role of co-rumination to explain the positive indirect relationship between negative affect and job search intentions benefits from the contexts in which individuals perceive increases in social support throughout the job search process.

Hypotheses

Drawing on previous research and theoretical rationales, the main objective of the present study was to analyze how state negative affect is positively related to job search intentions and how co-rumination works as an intermediate positive social coping strategy. Since the job search process is dynamic and complex, and it is rarely tracked over long periods of time at multiple time points, the authors aim to understand if the interaction between co-rumination and social support from different sources is positively associated with future job search intentions. Moreover, including a sub-sample of six-month job seekers (i.e., long-term unemployed people), this study aims to understand potential significant interactions between co-rumination and the amount of increased social support received from different sources. Hence, the following research hypotheses were formulated based on the literature reviewed above:

Hypothesis 1 *At the within-person level, co-rumination about job search experiences is associated with the positive indirect path between state negative affect and job search intentions.*

Hypothesis 2 *At the between-persons level, initial perceived social support moderates the within-person positive indirect relationship between state negative affect and job search intentions through co-rumination, such that this association is higher for individuals who perceive more — rather than less — social support.*

Hypothesis *a: At the between-persons level, initial perceived social support from family moderates the within-person positive indirect relationship between state negative affect and job search intentions through co-rumination, such that this association is higher for individuals who perceive more — rather than less — social support.*

Hypothesis *b: At the between-persons level, initial perceived social support from friends moderates the within-person positive indirect relationship between state negative affect and job search intentions through co-rumination, such that this association is higher for individuals who perceive more — rather than less — social support.*

Hypothesis *c: At the between-persons level, initial perceived social support from significant others moderates the within-person positive indirect relationship between state negative affect and job search intentions through co-rumination, such that this association is higher for individuals who perceive more — rather than less — social support.*

Hypothesis 3 *At the between-persons level, six-month job seekers with increased perceived social support strengthen (i.e., moderate) the within-person positive indirect relationship between state negative affect and job search intentions through co-rumination.*

Hypothesis *a: At the between-persons level, six-month job seekers with increased perceived social support from family strengthen (i.e., moderate) the within-person positive indirect relationship between state negative affect and job search intentions through co-rumination.*

Hypothesis *b: At the between-persons level, six-month job seekers with increased perceived social support from friends strengthen (i.e., moderate) the within-person positive indirect relationship between state negative affect and job search intentions through co-rumination.*

Hypothesis *c: At the between-persons level, six-month job seekers with increased perceived social support from significant others strengthen (i.e., moderate) the within-person*

positive indirect relationship between state negative affect and job search intentions through co-rumination.

Method

Participants

The sample consisted of 87 Portuguese master's graduates who were searching for jobs. Of these, 60 were women, and the participants' ages ranged from 22 to 53 years old ($M = 29.45$; $SD = 7.60$). Regarding their academic background, 75 had studied social and business sciences, and 12 studied other areas (e.g., engineering, arts). No significant differences were found in job search intentions by sex (t (84) = 1.13, $p > 0.05$, Boot CI 95% = −0.12, 0.45), age ($p > 0.05$, Boot CI 95% = −0.01, 0.03), and academic area (t (84) = −0.42, $p > 0.05$, Boot CI 95% = −0.42, 0.27). Of the 87 master's program graduates who participated in this study with 13 time points, our findings showed that no one got a job before time 3 (T3), 7 had started working at time 4 (T4), 9 at time 5 (T5), 7 at time 6 (T6), 7 at time 7 (T7), 2 at time 8 (T8), 3 at time 9 (T9), 0 at times 10 and 11, and 5 at time 12 (T12). In addition, 47 students were not working at the end of the data collection period (T13).

Procedures and design

Data collection began by contacting students who had finished their master's degree to obtain the necessary authorization for their participation in the study. All contact information was provided by the academic services of the universities at which their master's dissertations (i.e., research projects) were completed. At the beginning of the study about 135 job applicants who had completed a master's degree in three different universities were invited to participate. Among these, 13 were already employed, and 35 were not available to participate in the study (response rate = 64.4%).

The questionnaire comprised negative affect (state), co-rumination, perceived social support, job-search intentions, and a set of questions about sociodemographic characteristics (e.g., age, gender, and academic area), which were administered via an online platform. A link was sent by email to all participants, with a message explaining that they could find attached an explanation of the survey and its aims. A pledge of confidentiality was also included, assuring the participants that any findings would be used strictly for academic purposes. Data were collected biweekly during six months, between February and July 2013 in three Portuguese universities where the master's courses have a similar program and include the defense of a master's dissertation (i.e., a research project), which usually represents the end of the process for a master's degree before initiating a job search process. In the current study authors collected data in 2013 during a financial crisis experienced by southern Europe with negative implications for youth employment and emigration of highly qualified people (Glatzer, 2018). This specific period of data gathering is pertinent to understand how job markets react to crisis scenarios such as the Covid-19, as well as the energy and environmental crises the world is facing currently.

Research on job search has usually included only two or even three-time points, which does not allow for a detailed examination of the changes that occur during job search and how such changes are related to employment. In order to improve our knowledge in this topic and provide insights for job search interventions, it is important to develop a deeper understanding of fluctuations in job-search intentions during periods of unemployment. To measure the job search intentions of unemployed individuals, a bi-weekly data collection was implemented for a total of 13 time-points or until employment status changed, as recommended by Wanberg et al. (2005). Based on previous studies on co-rumination (e.g., Jose et al., 2012), we tracked participants for up to a maximum of six months or until they found employment. Therefore, a repeated measures design was used to examine predictors' variations regarding within-person job-search intentions over time.

We measured the independent variable (i.e., negative affect), the mediator variable (i.e., co-rumination), and the outcome variable (i.e., job search intentions) at 11 time points (T2 to T12). The moderator variables of social support from family, friends, and significant others were evaluated at two time points (i.e., T1 at the beginning and T13 at the end of data collection considering those participants that objectively state that they did not find a job). Given that the outcome variable was job search intentions, the maximum number of observations per participant would be 11. As some of the participants left the study when they started to work, on average they completed 8.1 within-person observations, representing a total of 956 observations with a compliance rate of 89.8%, like what Liu, Wang et al. (2014) obtained in their study. As participants found jobs, listwise deletion was implemented to manage the missing values in the next timepoints. Complementary analyses were conducted (as suggested in Liu, Wang et al., 2014) to compare participants that got a job during the study with those who did not get a job and completed the 13 time points. This dummy variable was used to evaluate if it moderated the relationships between the within-person variables considered in our hypothesis. Differences found between the two groups of participants were non-significant when controlling for time.

Measures

Negative affect (state). The PANAS (Watson et al., 1988) consists of two, 10-item mood scales developed to provide measures of positive and negative affect. Because co-rumination appears related to negative job search outcomes (Boren, 2014), and that the aim of the study is to understand the "dark side" of the job search intentions (e.g., Kreemers et al., 2018), only negative affect was considered in the research model. Examples of the negative affect mood descriptors were "fear," "shame," and "distress." The participants were asked to use a five-point scale to rate the extent to which they had experienced each mood state for the previous 15 days. The scale points were labeled from one to five as "Not at all," "Slightly," "Moderately," "Quite a bit," and "Very much," respectively. Regarding internal consistency, it was found that the values of the Portuguese version of the negative affect scale (Galinha & Pais-Ribeiro, 2005; $\alpha = 0.89$) are higher than those of the original scale (Watson et al., 1988; $\alpha = 0.87$). For the 11 time points (T2 to T12) at which measures were taken in the present study, the mean alpha (α) for negative affect was 0.93 (range = 0.90–0.96).

Co-rumination. Co-rumination was measured by nine items developed by Rose (2002) and later adapted to the workplace context by Haggard et al. (2011). The items assessed the extent to which job seekers typically co-ruminate with other people about their unemployment situation. Participants responded using a five-point scale to indicate how true each item was for them (1 = "Not at all true"; 5 = "Really true"). Sample items include, "When I have a problem looking for a job, my friend/family member tries to make me tell them all the details about what happened," and "When we talk about a problem that occurred while looking for a job, we talk a lot about the problem in order to understand what happened." Across the 11 time points (T2 to T12), the mean alpha for co-rumination was 0.92 (range = 0.89–0.95).

Multidimensional scale of perceived social support (MSPSS). Composed of 12 items, the MSPSS (Zimet et al., 1988) measures the social support provided by family, friends, and significant others. Each of these three sources of social support is assessed by four items (e.g., "I have friends with whom I can share my joys and sorrows;" "There is a special person with whom I can share my joys and sorrows;" "I get the emotional help and support I need from my family.") These were evaluated at two time points: at the beginning (T1) and at the end of data collection for those participants who did not find a job (T13). Responses were on a seven-point rating scale, ranging from "Very strongly disagree" (1) to "Very strongly agree" (7). The internal consistency of each subscale in the present study was adequate for both time points (significant others: $\alpha_{T1} = 0.93$ and $\alpha_{T1} = 0.96$, family: $\alpha_{T1} = 0.92$ and $\alpha_{T13} = 0.93$; friends: $\alpha_{T13} = 0.89$ and $\alpha_{T13} = 0.95$). A confirmatory factor analysis (CFA) was used to test the three-factor structure. To evaluate the CFA results, several goodness of fit indices were used: the chi-square (χ^2) and normed chi-square (χ^2/df), which indicate a good fit if $\chi^2/df < 2$ (Hu & Bentler, 1998). The other indices employed were the comparative fit index (CFI) with a good fit set at > 0.95, tucker-lewis index (TLI) at > 0.95 (Hu & Bentler, 1998), the root mean square error of approximation (RMSEA) at ≤ 0.08 (Kline, 2016), and the standardized root mean residual (SRMR) at ≤ 0.08 (Hu & Bentler, 1998; Kline 2016). The results revealed a good model fit for the first time point (T1): χ^2 (49) = 103.51 $p < 0.001$; $\chi^2/df = 2.11$; CFI = 0.94; TLI = 0.92; RMSEA = 0.09; SRMR = 0.06; and for the last measured time point (T13): χ^2 (46) = 117.74 $p < 0.001$; $\chi^2/df = 2.43$; CFI = 0.95; TLI = 0.93; RMSEA = 0.09; SRMR = 0.05). Since the correlation between the three factors ranged between 0.62 and 0.68 (in the last time point), models with a two-factor structure were also tested. The results showed (see Appendix) that the three-factor model fit better than another model, including a one-factor model. The validation of the scale for the Portuguese population proved to have adequate psychometric characteristics, namely in terms of internal consistency, with Cronbach's alpha coefficients ranging from 0.83 to 0.94 (Carvalho et al., 2011).

Job search intentions. We opted for job search intentions as a dependent variable because the literature shows strong positive significant correlations between job search intentions and employment status (Noordzij et al., 2013) as well as with job search behavior (Sheeran, 2002). This composite variable was assessed using four items developed by Wanberg et al. (2005). An example item is: "In the next two weeks, how hard do you intend to try to find a job?", with a scale ranging from 1 ("Not at all hard") to 4 ("Very hard"). Across the 11 time points (T2 to T12), the mean α for job search intentions was 0.90 (range = 0.66–0.97).

Measurement model for time-varying variables

For items measuring time-varying variables (i.e., state negative affect, co-rumination, and job search intentions), a three-factor model was tested at the within-person level. The CFA results showed that the relative χ^2 exceeded the recommended cut-off value ($\chi^2/df = 4.18$ for χ^2 (309) = 794.679, $p < 0.001$), but acceptable values were found for the other goodness of fit indices (CFI = 0.98, TLI = 0.98, RMSEA = 0.06, SRMR = 0.04). The CFA results thus suggested a good fit between the hypothesized model and the observed data at the within-person level.

The items' standardized factor loadings on their respective constructs were above 0.80 (range = 0.81–0.97), which

exceeds the threshold of 0.7 suggested by Hair et al. (2019). Furthermore, the average variance extracted (AVE) for the three constructs was far above the critical threshold value of 0.50: 0.98, 0.98, and 0.96 for state negative affect, co-rumination, and job search intentions, respectively. These results provided support for the convergent validity of all constructs (Hair et al., 2019). The square roots of AVE were all greater than the absolute value of the inter-construct correlations with the square roots of AVE ranging from 0.89 to 0.92 and inter-correlations ranged from 0.69 to 0.81. Thus, the three constructs also showed discriminant validity. In addition, three constrained models were tested in which two of the three factors (state negative affect, co-rumination, and job search intentions) were combined to highlight the suitability of the three-factor model. CFA(s) results showed that the hypothesized three-factor model had a better fit than any alternative ($319.11 \leq \Delta\chi^2\ (18) \leq 730.32$, $p < 0.001$).

Measurement invariance across time of repeated measures was also tested by comparing models (i.e., constrained vs. unconstrained) in nested conditions. The comparison between metric variance (factor loadings were equally constrained across at the 11 time points included) and unconstrained model was not significant ($\Delta\ \chi^2\ (200) = 187.19$, $p = 0.733$) according χ^2 difference test (Bentler & Bonett, 1980). Thus, the invariant factor loadings across time was established. The next level of measurement invariance – scalar (or strong) invariance – was also tested. The null hypothesis was rejected ($\Delta\chi^2\ (430) = 688.91$, $p < 0.001$). As it is known, the Chi square test may not be a reliable indicator due to its permeability to sample size (Hu & Bentler, 1998), the assessment of invariance was complemented with the comparative fit index (CFI). A ΔCFI $\leq$ –0.01 indicates the null hypothesis of invariance should not be rejected (Cheung & Rensvold, 2002). Given the obtained results, the variation of CFI value was within the margin for accepting measurement invariance ($\Delta CFI = -0.02$).

Common method variance

Given that all the research data were self-reported, and although the variables collected at numerous time points, common method bias was also assessed. As suggested by Podsakoff et al. (2003), a latent common method variance factor was added to the assessed three-factor model, and all the items were allowed to load on that latent factor. The results for the chi-square difference tests showed that the better fit provided by the model with the latent common method variance factor was significantly superior for all the 11 time points ($44.51 \leq \Delta\chi^2\ (22) \leq 89.52$, $p < 0.001$). However, none of the items' standardized factor loadings on the common latent factor were significant ($p > 0.05$) at any point in time. Therefore, common method variance most likely did not affect the results.

Data analysis

The data in this study had a hierarchical structure with repeated measurements at various time points nested within participants. A linear mixed-effects model was used to test the hypotheses. This equation corresponded to the full model and combined level-1 and level-2.

$$Y_{ti} = \beta_{00} + \beta_{10}\ Time_{ti} + \beta_{20}\ State\ negative\ affect_{ti} + \beta_{30}\ Co\_rumination_{ti} + \beta_{01}\ Perceived\ social\ support_i + \beta_{11}\ Co\_rumination_{ti} * Perceived\ social\ support_i + u_{1i}\ Time_{ti} + u_{oi} + \varepsilon_{ti}$$

Y_{ti} = *Job search experiences for individuals (i = 1, …, n) measured at time t Perceived social support a) from family; b) from friends; c) from significant*

A two-step approach facilitated testing for moderated mediation. First, the linear mixed model procedure was used to estimate the path coefficients, as proposed by Bauer et al. (2006). To overcome the classical two-step approach testing mediation using regression models for M and Y separately, Bauer et al. (2006) proposed to rearrange the data by providing an estimation of the full lower-level mediation model with a single equation. Thus, a specific syntax was implemented to fit the lower-level mediation model using the MIXED procedure in SPSS and all the information needed to evaluate the hypothesized effects of the model was obtained. To assess the indirect effects and conditional indirect effects the Monte Carlo method was implemented. This is advantageous because it does not assume normality for the sampling distributions of the average indirect effects (Preacher & Selig, 2012). First, the obtained summary data were imputed in the interactive tool for creating confidence intervals for indirect effects in 1-1-1 multilevel models (Preacher & Selig, 2010) and then using the R package mediation, 95% confidence intervals based on 20,000 simulated for indirect effects were computed.

The person-mean centering approach to the time-varying predictors has been recommended (Wang & Maxwell, 2015) to enable multilevel modeling with a set of measures collected at multiple points in time from multiple individuals. The time-varying predictors (within person-variables: state negative affect, co-rumination, and job search intentions) were centered on individual means (i.e., group-mean centered), and the between-person variables (multidimensional scale of perceived social support) were grand-mean centered. Centering the predictor variables ensure accurate interpretation of statistical estimates in multilevel modelling (Raudenbush & Bryk, 2002). Additionally, Bauer and

Curran (2005) propose group-mean centering for level-1 predictors and grand-mean centering for level-2 to enhance computation and interpretation of the main effects when the model include cross-level interactions, which is the case.

As the data were vertically arranged, the number of individual records used for multilevel modelling reflected that each participant had up to a maximum of 11 lines (total N = 957 observations), corresponding to the variables measured at different time points (T2 to T12). Different residual covariance structures were used at different levels of the model. An autoregressive covariance matrix and an unstructured covariance matrix were specified at Level 1 and Level 2 (respectively).

Results

To confirm adequate within-person variance, a set of random intercept models was built for the three within-person variables, as suggested by Liu, Wang et al. (2014). The results showed that, for state negative affect, co-rumination, and job search intentions, 63.3% (ICC = 36.7%), 45.6% (ICC = 54.4%), and 55.6% (ICC = 44.4%) of the total variance, respectively, were within-person changes across all the time points. Thus, the results provided empirical support for the use of multilevel modelling.

Given that the predictors of the model were time-varying (i.e., within-person variation), and following the same procedures of Liu, Wang et al. (2014), the between-person covariates control variables (i.e., gender, age, type of institution, and official statistics with the percentage of graduates who got jobs per course) were not included in the hypothesis testing. However, we tested these control variables, and the inclusion of these variables did not modify the estimates of within-person effects. As recommended by Curran et al. (2012), time was included as a covariate in the first-level model via multilevel modeling. Thus, the linear time effect was controlled while the within-person effects on job search intentions were analyzed. Table 1 summarizes the means, standard deviations, correlations, and reliability of the variables included in the study.

Hypothesis 1 predicted that *at the within-person level, co-rumination about job search experiences mediates the positive indirect path between state negative affect and job search intentions.* This hypothesis was tested with a lower-level mediation with random indirect effects as proposed by Bauer et al. (2006). A positive indirect effect was obtained ($\beta_{ab} = 0.03$, Table 2), and the 95% confidence interval did not include zero (0.02, 0.05). Thus Hypothesis 1 was supported. The relationship between state negative affect and job search intentions at the within-person level was fully mediated by co-rumination.

Hypothesis 2 proposed that *at the between-persons level, initial perceived social support (2a = family; 2b = friends; and 2c = significant others) moderates the within-person positive indirect relationship between state negative affect and job search intentions through co-rumination, such that this association is higher for individuals who perceive more – rather than less – social support*. A cross-level interaction term was created, and the multilevel moderated mediation was tested, producing the results presented in Table 3.

The interaction effect between co-rumination and perceived social support on job search intentions was not significant for support from family ($\beta = 0.04$, $t = 0.83$, $p > 0.05$) and for support from friends ($\beta = 0.03$, $t = 0.90$, $p > 0.05$), but was significant for support from significant others ($\beta = 0.08$, $t = 2.76$, $p = 0.006$). Thus, Hypothesis 2c was supported, but Hypotheses 2a and 2b were not. As can be seen in Table 4, the indirect effect between state negative affect and job search intentions through co-rumination increased as the perceived social support from significant others also increased. For those with a high level (+ 1 *SD*) and a medium level of perceived social support from significant others, the indirect effect was positive and significant (estimate = 0.036, 95% CI = 0.00, 0.07 and estimate = 0.031, 95% CI = 0.00, 0.06, respectively). However, this effect was not significant at the lower level (– 1 *SD*) of the moderator (estimate = 0.026, 95% CI = -0.00, 0.06).

Hypothesis 3 stated that *at the between-persons level, six-month job seekers with increased perceived social support (**3a** = family; **3b** = friends; **3c** = significant others) strengthen (i.e., moderate) the within-person positive indirect relationship between negative affect and job search intentions through co-rumination.* The difference between perceived social support in time T13 and T1 was computed only for participants who completed all the 13 time-points. The mean difference was significant for each perceived social support ($M_{\text{dif PSS Family}} = 0.26$, $p < 0.001$, $M_{\text{dif PSS Friends}} = 0.26$, $p < 0.001$ and $M_{\text{dif PSS SO}} = 0.25$, $p < 0.001$). Table 4 showed that the interaction effect between co-rumination and the change in amount of perceived social support (T13 – T1) on job search intentions was positive and significant for social support from family ($\beta = 0.09$, $t = 2.19$, $p = 0.029$) and significant others ($\beta = 0.09$, $t = 2.47$, $p = 0.014$).

Specifically, at medium and high levels of the change in amount of perceived social support (T13 – T1) from family the indirect effect was positive and significant (estimate = 0.027, 95% CI = 0.01, 0.05 and estimate = 0.052, 95%

Table 1 *Descriptive statistics, reliability and correlation of the variables*

Variables		*Mean*	*SD*	1	2	3	4	5	6	7	8	9	10
Within-person variables (N = 957)													
Level-1	1. State negative affect	1.97	0.76	(0.93)									
	2. Co-rumination	2.44	0.76	0.19***	(0.92)								
	3. Job search intentions	2.65	0.64	−0.13**	0.17***	(0.90)							
Between-person variables (N = 87)													
Level-2	1. Gender [a]	0.31	-										
	2. Age	29.45	7.60	0.33**									
	3. Type of institution [b]	0.76	-	−0.03	0.13								
	4. Employment rate	91.91	5.72	−0.07	−0.05	0.56***							
	5. PSS – Family (T1)	5.88	0.96	0.18	0.01	−0.11	−0.05	(0.92)					
	6. PSS – Friends (T1)	5.92	0.86	−0.16	−0.27*	0.01	0.03	0.31**	(0.89)				
	7. PSS – Significant others (T1)	6.13	0.98	0.03	−0.12	−0.06	0.00	0.25**	0.36**	(0.93)			
	8. PSS – Family (T13)	5.86	0.97	0.15	−0.06	−0.02	0.14	0.45**	0.09	0.10	(0.93)		
	9. PSS – Friends (T13)	5.76	1.02	−0.14	−0.27*	−0.01	0.02	0.17	0.37***	0.15	0.62***	(0.95)	
	10. PSS – Significant others (T13)	5.98	1.02	0.06	−0.07	−0.06	0.08	0.12	0.15	0.29**	0.64***	0.68***	(0.96)

Note. PSS – Perceived social support. T1 – time point 1. T13 – time point 13.

Cronbach's alphas for the scales are in parenthesis and are presented along the diagonal.

[a] 0 = female, 1 = male. The proportion of males is reported

[b] 0 = private, 1 = public. The proportion of public institution is reported

*$p < 0.05$. **$p < 0.01$. ***$p < 0.001$.

Table 2 *Results of multilevel mediation*

	Co-rumination			Job search intentions		
	Coeff.	SE	95% CI	Coeff.	SE	95% CI
Total effect						
Intercept				2.85***	0.08	2.69, 3.01
Time				-0.27*	0.10	-0.47, -0.07
State negative affect				-0.04	0.03	-0.10, 0.01
Variance components						
Level-1 variance				0.16***	0.01	0.14, 0.19
Level-2 variance				0.25***	0.05	0.17, 0.38
Direct effect						
Intercept	2.51***	0.09	2.34, 2.69	2.74***	0.06	2.62, 2.86
Time	-0.45***	0.09	-0.63, -0.26	-0.22*	0.10	-0.42, 0.01
State negative affect	0.06†	0.03	-0.00, 0.12	-0.04	0.03	-0.10, 0.02
Co-rumination				0.14***	0.03	0.07, 0.21
Variance components						
Level-1 variance	0.21***	0.01	0.18, 0.24	0.16***	0.01	0.14, 0.18
Level-2 variance	0.28***	0.06	0.19, 0.41	0.25***	0.05	0.17, 0.38
Indirect effect of state negative affect on job search intentions via co-rumination				0.03	0.00	0.02, 0.05

Note: Monte Carlo method was used to compute a 95% CI based on 20,000 simulated draws from the distributions for the *a* and *b* parameters
† $p < 0.10$. * $p < 0.05$. *** $p < 0.001$.

CI = 0.02, 0.09, respectively) (Table 5). The indirect effect was also positive and significant at the medium and high levels of the change in amount of perceived social support (T13 – T1) from significant others (estimate = 0.027, 95% CI = 0.01, 0.05, and estimate = 0.060, 95% CI = 0.03, 0.10, respectively). The indirect effect of state negative affect on job search intentions through co-rumination increased as the change in amount of perceived social support from family and significant others increased. The results provided support for Hypothesis 3 for the moderators perceived social support from family (H3a) and significant others (H3c).

Discussion

This study integrates several conceptual and theoretical frameworks to explain the complex dynamics of the job search process. Specifically, we included social cognitive theory (Bandura, 1986, 2001) to explain the socio-cognitive dynamics of searching for a job with the lens of basic-needs (Ryan & Deci, 2000) and reasoned action (Fishbein & Ajzein, 1975) theories. Therefore, the current research brings to the job search and HRM literatures an integrated theoretical model where co-rumination appears as a proxy agency (Bandura, 1986, 2001) that translates negative affect into job search intentions (Fishbein & Ajzein, 1975). In addition, over time unemployed individuals who have individual (e.g., autonomy), contextual (e.g., relatedness) and behavioral (e.g., competence) needs met (Bandura, 2006; Ryan & Deci, 2000) increase their intentions to search for a job.

In line with Hypothesis 1 (at the within-person level, co-rumination about job search experiences is associated with the positive indirect path between state negative affect and job search intentions), there was a positive indirect relationship between state negative affect and job search intentions, uncovering a mediating process. Specifically, this provides insight into the roles of state negative affect and co-rumination in coping theories (Lazarus & Folkman, 1984). It also points to important avenues for future research on the role of co-rumination in job search processes. This study thus extends the co-rumination literature by conceptualizing co-rumination as a social coping mechanism among job seekers. Moreover, these results address inconsistencies in past findings on the relationship between negative affect and job search intentions (Côté et al., 2006; Motta Veiga et al., 2020; Turban et al., 2013) by explaining that this link is mediated by co-rumination. Job seekers revise their job search behaviors and goals during co-rumination (van Hooft et al., 2013) and increase their levels of energy and motivation (Motta Veiga et al., 2020) as a compensatory strategy in order to cope with the negative experiences encountered during the job search process.

This study addresses a call from a recent study (Jolly et al., 2021) to examine the role of different sources of social support. In order to explore the role of three sources of social support over the job search process Hypotheses 2 was developed; specifically, that at the between-persons level, initial perceived social support (H2a from family; H2b friends; and H2c significant others) moderates the within-person positive indirect relationship between state negative affect and job search intentions through co-rumination, such

Table 3 *Results of the multilevel moderated mediation effect*

	Co-rumination			Job search intentions		
	Coef.	*SE*	95% CI	Coef.	*SE*	95% CI
Total effect						
Intercept				2.76***	0.06	2.64, 2.87
Time [1)]				-0.27**	0.10	-0.48, -0.07
State negative affect [2)]				-0.04	0.03	-0.09, 0.02
Variance components						
Level-1 variance				0.16***	0.01	0.14, 0.19
Level-2 variance				0.25***	0.05	0.17, 0.38
Direct effect & Moderator effects						
Intercept	2.51***	0.09	2.34, 2.69	2.74***	0.06	2.62, 2.87
Time [1)]	-0.45***	0.09	-0.63, -0.26	-0.23*	0.10	-0.44, -0.02
State negative affect [2)]	0.06†	0.03	-0.00, 0.12	-0.04	0.03	-0.10, 0.02
Co-rumination [2)]				0.14***	0.04	0.07, 0.21
SSP Family (T1) [3)]				0.11†	0.06	-0.01, 0.22
Co-rumination * PSS Family				0.04	0.04	-0.05, 0.12
Variance components						
Level-1 variance	0.21***	0.01	0.18, 0.24	0.16***	0.01	0.14, 0.18
Level-2 variance	0.28***	0.06	0.19, 0.41	0.25***	0.05	0.17, 0.38
Intercept				2.74***	0.06	2.62, 2.86
Time [1)]				-0.21*	0.10	-0.42, -0.00
State negative affect [2)]				-0.04	0.03	-0.10, 0.02
Co-rumination [2)]				0.14***	0.03	0.07, 0.21
SSP Friends (T1) [3)]				0.06	0.06	-0.06, 0.18
Co-rumination * PSS Friends				0.04	0.04	-0.04, 0.11
Variance components						
Level-1 variance				0.16***	0.01	0.14, 0.18
Level-2 variance				0.26***	0.05	0.17, 0.38
Intercept				2.74***	0.06	2.62, 2.86
Time [1)]				-0.21*	0.11	-0.43, -0.00
State negative affect [2)]				-0.04	0.03	-0.09, 0.02
Co-rumination [2)]				0.16***	0.03	0.09, 0.22
SSP SO (T1) [3)]				0.07	0.05	-0.04, 0.17
Co-rumination * PSS SO				0.08**	0.03	0.02, 0.14
Variance components						
Level-1 variance				0.16***	0.01	0.14, 0.19
Level-2 variance				0.26***	0.05	0.17, 0.38

Note. PSS = Perceived Social Support (Family, Friends, Significant Others); SO = Significant Others. N = 702 observations at the within-person level. (T1) – Time point 1.

(1) Time variable included 11 time points (T2 to T12) (2) Within-person variables measured in 11 time points (T2 through T12); (3) (T1) – Perceived Social Support measured at the initial time point.

† $p < 0.10$. * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

that this association is higher for individuals who perceive more — rather than less — social support. Contrary to what we expected, support from family (H2a) and friends (H2b) did not appear to function as moderators early in the job search process, but support from significant others (H2c) did, interacting with co-rumination to strengthen the relationship between negative affect and job search intentions. According to H2c, the role of social support from significant others in the initial stages of job search has been corroborated by previous studies of university students (Hwang et al., 2017). Social support from significant others provides job seekers with a perception that they are cared for by others that they can trust in times of need (Dambi et al., 2018). The effect of this interaction is such that state negative affect becomes a better predictor of job search intentions when job seekers have higher levels of perceived social support, allowing them to reduce the stress caused by negative experiences (Boren, 2014) through co-rumination. These results add to social support theories (Wills, 1991) in explaining the importance of social support from significant others, especially in initial phases of job search process and may be important to deal with future problems arising

Table 4 *Results of the multilevel moderated mediation effect with the change in amount of perceived social support (T13-T1).*

	Co-rumination			Job search intentions		
	Coef.	*SE*	95% CI	Coef.	*SE*	95% CI
Total effect						
Intercept				2.78***	0.09	2.60, 2.96
Time [1)]				-0.20	0.10	-0.40, 0.01
State negative affect[2)]				-0.03	0.03	-0.09, 0.03
Variance components						
Level-1 variance				0.14***	0.01	0.12, 0.16
Level-2 variance				0.18***	0.05	0.11, 0.31
Direct effect & Moderator effects						
Intercept	2.48***	0.08	2.31, 2.64	2.68***	0.07	2.53, 2.83
Time [1)]	-0.40**	0.15	-0.70, -0.11	-0.13	0.10	-0.34, 0.08
State negative affect [2)]	0.08*	0.04	0.01, 0.16	-0.03	0.03	-0.09, 0.03
Co-rumination [2)]				0.22***	0.04	0.14, 0.30
Δ(T13 – T1) PSS Family				-0.04	0.07	-0.18, 0.10
Co-rumination * Δ(T13 – T1) PSS Family				0.09*	0.04	0.01, 0.16
Variance components						
Level-1 variance	0.26***	0.02	0.23, 0.29	0.14***	0.01	0.12, 0.16
Level-2 variance	0.81***	0.18	0.52, 1.26	0.19***	0.05	0.11, 0.33
Intercept				2.69***	0.07	2.54, 2.83
Time [1)]				-0.13	0.10	-0.34, 0.08
State negative affect [2)]				-0.03	0.03	-0.09, 0.03
Co-rumination [2)]				0.20***	0.04	0.12, 0.27
Δ(T13 – T1) PSS Friends				0.02	0.06	-0.10, 0.14
Co-rumination * Δ(T13 – T1) PSS Friends				0.05	0.03	-0.02, 0.12
Variance components						
Level-1 variance				0.14***	0.01	0.12, 0.16
Level-2 variance				0.19***	0.05	0.11, 0.32
Intercept				2.69***	0.07	2.54, 2.83
Time [1)]				-0.13	0.10	-0.34, 0.08
State negative affect [2)]				-0.03	0.03	-0.10, 0.03
Co-rumination [2)]				0.19***	0.04	0.12, 0.27
Δ(T13 – T1) PSS SO				-0.05	0.07	-0.19, 0.09
Co-rumination * Δ(T13 – T1) PSS SO				0.09*	0.04	0.01, 0.16
Variance components						
Level-1 variance				0.14***	0.01	0.12, 0.16
Level-2 variance				0.19***	0.05	0.11, 0.32

Note. PSS = Perceived Social Support (Family, Friends, Significant Others); SO = Significant Others; $N = 517$ observations at the within-person level. *SE* = Standard error. (T1) – Time point 1. T13 – Time point 13. Δ(T13 – T1) PSS = change in amount of perceived social support T13-T1.
[(1)] Time variable included 11 time points (T2 to T12) [(2)] Within-person variables measured in 11 time points (T2 through T12).
$^{*}p < 0.05$. $^{**}p < 0.01$. $^{***}p < 0.001$.

from job search experiences (i.e., rejections, frustration, and low self-esteem). These findings reinforce past studies suggesting that co-rumination becomes more effective to help individuals (Moreira et al., 2016) in contexts of high-quality relationships (Rose, 2002).

Hypothesis 3 stated that at the between-persons level, social support (H3a from family; H3b friends; and H3c significant others) strengthens (i.e., moderates) the within-person positive indirect relationship between state negative affect and job search intentions through co-rumination. Accordingly, this study shows that increased social support from both significant others (H3c) and from family (H3a) later in the job search interacts with co-rumination to explain job search intentions. Over time, job seekers tend to find other resources (both important others and family) and coping

Table 5 *Results of conditional indirect effects in a moderated mediation model*

		Job search intentions		
		Coef.	*SE*	95% CI
Hypothesis 2c	Indirect effect for levels of moderator PSS SO (T1)			
	1 *SD* below the mean	0.026	0.00	-0.00, 0.06
	At the mean	0.031	0.00	0.01, 0.06
	1 *SD* above the mean	0.036	0.00	0.01, 0.07
Hypothesis 3a and 3c	Indirect effect for levels of moderator PSS Family with the Δ(T13-T1) PSS			
	1 *SD* below the mean	0.002	0.01	-0.02, 0.02
	At the mean	0.027	0.01	0.01, 0.05
	1 *SD* above the mean	0.052	0.02	0.02, 0.09
	Indirect effect for levels of moderator PSS SO with the Δ(T13-T1) PSS			
	1 *SD* below the mean	-0.007	0.01	-0.03, 0.01
	At the mean	0.027	0.01	0.01, 0.05
	1 *SD* above the mean	0.060	0.18	0.03, 0.10

Note: PSS = Perceived Social Support; SO = Significant Others. *SD* – Standard deviation. (T1) – Time point 1. T13 – Time point 13. *SE* = Standard error. *CI* = Confidence interval. Δ(T13-T1) PSS = change in amount of perceived social support T13-T1. Monte Carlo method was used to compute a 95% CI based on 20,000 simulated draws from the distributions for the *a* and *b* parameters.

strategies to reduce their stress and protect themselves from the frustrations of repeated failure (Cohen & Wills, 1985). The family may have a "container" effect where individuals can safely share their emotions, feelings, fears and anxieties, which tends to increased self-esteem, positive mood, and optimistic outlook on life and decreased feelings of stress, loneliness, and failure (Brannan et al., 2013). Thus, increased social support over time may provide the basic needs required to take the advantages of the long-term co-ruminative process in translating negative affect into positive outcomes.

Practical implications

The present study confirms that the significant other is a primary salient social support outlet for early job search activities. Given the importance of social support in job search interventions (Liu, Huang & Wang, 2014), this suggests that career counselors or career services within a university should reach out to recent graduate alumni to support their early job-search activities. Specifically, universities could encourage job seekers to seek social support from significant others and from family. They could also train and develop role models (e.g., significant others) to support job seekers and enhance their job search behaviors (Liu, Wang et al., 2014). Further, job seekers may be encouraged to discuss (co-ruminate about) their job search problems to receive motivation, feedback from other colleagues, advice, and strategies to successfully find a job opportunity and therefore reduce uncertainty and decrease job search pressure (Lopez-Kidwell et al., 2013). Smartphone APPs or websites could be developed to support such interventions.

The literature (Liu Huang & Wang, 2014) also offers evidence that job search interventions providing specific job search skills (e.g., techniques to improve self-efficacy and proactivity) tend to increase unemployed individuals' capacity for enlisting social support. Thus, vocational counsellors or career services professionals need to develop programs that stimulate job seekers to list potential sources of social support and ways these resources might help them at different phases of their job search process.

Finally, since job seekers sometimes get scant feedback, career services professionals must encourage them to seek feedback (van Hooft et al., 2013). This should include stimulating co-rumination as a source of coping with state negative affect associated with a failed job search, especially when such co-rumination is combined with different sources of social support.

Limitations and directions for future research

Although this study contributes to research and practice, it does had some limitations. First, this study was conducted with a relatively small sample of students who had completed a master's degree. Accordingly, the results cannot be generalized to new labor market entrants or students with lower qualifications, population segments for whom long-term unemployment is particularly problematic (Lopez-Kidwell et al., 2013). Future studies should replicate these findings with different samples and groups of job seekers (e.g., individuals with disabilities; Cao & Meng, 2022). In addition, future studies may want to consider individuals in transition between jobs or cases of long-term unemployment.

Second, data were collected in the aftermath of a global economic recession, with Portugal being one of the most highly affected countries. For example, Portugal had a

significantly higher rate of youth unemployment compared with other countries such as the United States or United Kingdom (Organisation for Economic Co-operation and Development [OECD], 2017). On the other hand, the long periods of unemployment experienced by those in this sample allowed us to examine their job search experiences over six months. Future studies should be conducted in countries with lower unemployment rates and considering a longer period of job search (e.g., 12 or 18 months).

Another possible limitation is that the scales used to measure job search attitudes and intentions were self-reported measures limited to a few items each. In addition, the measures of co-rumination did not capture duration and antecedents, as well the different forms of rumination. Although we applied a methodological approach similar to that found in the previous literature on job search processes (e.g., Liu, Huang & Wang, 2014; Motta Veiga & Gabriel, 2016), we encourage future research to include repeated measures of social support (i.e., not just two-wave designs) and to evaluate the job search process until participants are employed. We also encourage the use of objective measures of job search or even other measures of job search self-efficacy that revealed to be adequate to evaluate job search self-efficacy outcomes 23 months following graduation (cf., Emirza et al., 2021).

Future studies should also consider variables related to state negative affect. For example, some research (e.g., Ali et al., 2016) shows that perceived hostility contributes negatively to job search self-efficacy. Other studies have revealed a relationship between goal appraisal and negative affect and that co-rumination differs for various levels of depression (Moberly & Watkins, 2010). Therefore, future studies could take factors such as job seekers' depression, goal appraisal, or need to find a job (e.g., financial constraints, parental pressure) as measures that promote state negative affect during job search processes (Harman et al., 2022). In short, the job search process can be a difficult one, and understanding ways to support job seekers, or help them support themselves, can be key to their success.

Conclusion

To our knowledge, this is the first study to examine co-rumination in the job search process. We developed a comprehensive model where co-rumination explains the path between state negative affect and job search. Moreover, our study introduces social support as an important moderator, explaining job search process among recent graduate students. Although a specific source of social support (i.e., significant others) tended to yield benefits in the initial phases of job search, the role of other sources of social support (i.e., family and friends) increased over time. Despite the limitations, these results provide interesting contributions for theory and suggest important guidance for vocational counsellors or job search interventionists.

Appendix

Fit indices for measurement model comparisons.

	Models	χ^2 (df)	χ^2 / df	CFI	TLI	RMSEA	SRMR
Time-point 1	Model 1 – Three-Factor	103.51 (49) ***	2.11	0.94	0.92	0.09	0.06
	Model 2 [a] (T1)	175.11 (48) ***	3.65	0.86	0.81	0.18	0.15
	Model 3 [b] (T1)	162.93 (49) ***	3.33	0.87	0.83	0.16	0.13
	Model 4 [c] (T1)	228.87 (49) ***	4.63	0.80	0.74	0.21	0.18
	Model 5 [d] (T1)	209.10 (43) ***	4.86	0.82	0.72	0.21	0.06
Time-point 13	Model 1 – Three-Factor	117.74 (46) ***	2.43	0.95	0.93	0.09	0.05
	Model 2 [a] (T13)	172.14 (47) ***	3.66	0.90	0.86	0.18	0.10
	Model 3 [b] (T13)	191.89 (48) ***	3.99	0.89	0.84	0.19	0.10
	Model 4 [c] (T13)	184.62 (48) ***	3.85	0.89	0.85	0.18	0.10
	Model 5 [d] (T13)	123.39 (38) ***	3.25	0.93	0.88	0.16	0.06

Notes: χ^2 – Chi-square. df – Degrees of freedom. χ^2/df – Normed chi-square. CFI – Comparative fit index. TLI – Tucker–Lewis index. RMSEA – Root mean square error of approximation. SRMR – Standardized root mean square residual. T1 – Time point 1. T13 – Time point 13.

[a] Significant others and family combined into a single factor.

[b] Significant others and friends combined into a single factor.

[c] Family and friends combined into one factor.

[d] The three factors combined into a single factor.

*** $p < 0.001$

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Data Availability The data that support the findings of this study are available from the corresponding author upon reasonable request.

Declarations

Conflict of interest The authors declare that they have no conflict of interest.

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