

**Daily Savouring as a Possible Resource of Resilience: Decreasing the Intensity of  
Negative Affect and Unpleasant Events in Daily Life  
An Experience Sampling Study**

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July 2022

### Abstract

**Background:** Past research mostly focused on the positive emotion regulation strategy savouring as a trait measure and its significant association with positive affect and events. However, interventional studies highlighted the importance of the use of savouring to decrease daily negative affect. Additionally, it was found that savouring and resilience were positively correlated. It is, therefore, conceivable that savouring in daily life acts as a factor of resilience buffering the intensities of negative affect and unpleasurable events. Thus, the current study aims to investigate the association between trait resilience and momentary savouring, as well as the moderation effect of trait resilience on the association between savouring and negative affect in daily life. Lastly, to investigate the possible buffering effect of savouring, its moderation role on the association between negative affect and unpleasurable events in daily life will be assessed.

**Method:** Experience sampling was the method of the current study. Participants ( $N = 59$ ) answered four questionnaires daily over a period of 14 consecutive days assessing state measures of negative affect, unpleasurable events and savouring. Besides, one baseline questionnaire assessed trait measures of depressive symptoms, resilience, and savouring the moment. Analyses were conducted using linear mixed models and bivariate correlations.

**Results:** Bivariate correlation of trait resilience and momentary savouring was weak, positive and significant ( $r = .28, p < .05$ ). Trait resilience weakly and positively moderated the negative association between momentary savouring and negative affect ( $\beta = .03, p < .05$ ). Momentary savouring weakly and negatively moderated the association between unpleasurable events and momentary negative affect ( $\beta = -.08, p < .001$ ).

**Conclusion:** The study showed that higher scores of trait resilience associate with higher scores in the use of momentary savouring in daily life and vice versa. Additionally, resilience moderated the association between momentary savouring and momentary negative affect, implying that both – savouring in daily life and resilience – help to decrease negative emotions. This is in line, with savouring moderating the association between unpleasurable events and negative affect in daily life. It is likely that savouring acts as a resource of resilience in buffering negative impacts of negative emotions and events.

“Life doesn’t get easier or more forgiving, we get stronger and more resilient” as Dr. Steve Maraboli once wrote (as cited in Lipscomb, 2017). The concept of resilience is an important topic in psychology, since it is the general ability of individuals to reduce the effect of negative events on their psychological health by deciding on how to react and approach to those events (Maltby et al., 2015). In other words, it describes how resistant different individuals are in dealing with the impact of unpleasurable events relatively stable over time, implying the conceptualisation of resilience as a dispositional trait (Kuldas & Foody, 2021). Withal, recent research highlighted the idea of a dynamic interplay between intrinsic characteristics and external resources prolonging to resilience (Flynn et al., 2021; Kuldas & Foody, 2021). This idea leads to the question, what helps individuals to ‘get stronger and more resilient’? Besides other resources, being able to manage one’s emotions (McRae & Gross, 2020), is reported frequently in literature and summarises the general idea of emotion regulation strategies (Connor & Davidson, 2003; Riopel, 2022). By strengthening an individual’s ability to manage their emotions it is likely that their ability to buffer the effect of negative emotions and events rises and, in turn, benefits their mental health (Connor & Davidson, 2003; Tugade & Frederickson, 2007).

### **Resilience and its Resources**

Resilience plays a crucial role in mental health. Most research focused on how trait resilience protects the well-being of individuals after encountering extreme stressful events or crisis. Findings suggested that individuals with a higher perceived ability to deal with these events had greater life satisfaction and higher levels of positive affect (e.g., Bonanno, 2004; Hu et al., 2015). Conversely, lower levels of resilience correlated with higher scores in depressive symptoms and negative affect (Hu et al., 2015). Nonetheless, the impact of minor stressors on mental health in daily life received further attention. For instance, Almeida (2005) conducted a daily diary study and reported that individuals scoring low on trait resilience, rated daily events as more severe and burdening, than people who scored higher on resilience. Thus, the level of resilience appears to protect individuals from the negative impact of daily threatening events (Almeida, 2005; Hu et al., 2015). In turn, improving how individuals react to disturbing situations can benefit the well-being of different groups of individuals (Zautra et al., 2010).

Knowing how to approach daily stressors can, therefore, positively influences the daily functioning of humans. This view is supported by a study conducted by Diehl and Hay (2010) who investigated the effect of trait resilience on affect and negative events in daily life. They found that the group scoring high on resilience were less likely to experience negative affect

after facing negative events, while the group scoring low on trait resilience showed an increase in negative affect. The difference between the groups can be explained by possessing certain characteristics related to the concept of trait resilience (Diehl & Hay, 2010), supporting the idea of the dynamic interplay of different resources strengthening resilience reactions (Kuldas & Fooday, 2021). For instance, a strong social network, being mindful (Smith et al., 2013) and tolerance to negative affect (Connor & Davidson, 2003) prolong the process of reacting adequately to negative situations. Focusing on the latter, Riopel (2022) describes that “being able to effectively manage your feelings and impulses in a healthy manner” (para. 5) is an important characteristic contributing to the repertoire of resilience.

### **Emotion Regulation Strategies and Savouring**

The attempts of influencing one’s emotions and how those are perceived and expressed can be referred to as emotion regulation (McRae & Gross, 2020). The way emotions are produced can be modified on a conscious or unconscious, and automatic or controlled level (Gross, 1998; McRae & Gross, 2020). For instance, people face different events daily which evoke certain emotions and by focusing on those emotions, people can identify which feelings need more attention than others in order to prevent intense feelings – summarising the regulatory process shortly (Chowdhury, 2022). It is conceivable that besides resilience, emotion regulation plays an important role in mental health. For instance, not paying attention to one’s feelings was found to explain the maintenance of psychopathologies (Gross & Jazaieri, 2014). Adding to that, Joorman and Stanton (2016) found that depressed individuals scoring high on the ability to regulate their emotions were less likely to experience negative affect such as anxiousness compared to depressed people scoring low on this ability. In line with that, were strategies such as reappraisal and acceptance related with higher well-being, while it was the opposite for avoidance and rumination (Aldao et al., 2010; Kraiss et al. 2020). Although most research focused on downregulatory strategies to reduce the experience of unpleasant emotions (Tugade & Frederickson, 2007), recent studies focused on the role of upregulating pleasant emotions. According to Quoidbach et al. (2010) individuals frequently engage in regulatory strategies to enhance or maintain positive emotions and are termed as positive emotion regulation strategies.

Savouring is one of these strategies and can be defined as an internal process of an individual to consciously trying to maintain a positive emotion by paying attention to the event that evoked the emotion (Bryant & Veroff, 2017; Tugade & Frederickson, 2007) and can, further, be considered as an act of mindfulness (Cheung & Ng, 2020; Smith et al., 2013). Hereby, positive feelings can be intensified by thinking about past experiences (reminiscing), by

appreciating present events, or by thinking about pleasurable events in the future (anticipation) (Tugade & Frederickson, 2007). Trait savouring was found to be positively correlated with higher scores in well-being and positive psychological states, such as optimism and trait resilience (Smith & Hanni, 2017; Sytine et al., 2018). Additionally, interventional studies found that training savouring (the moment) reduced depression and negative affect (e.g., Hurley & Kwon 2012; Hurley & Kwon, 2013; McMakin et al., 2011; Quidbach et al., 2009). Lastly, Jose et al. (2012) constituted that state savouring positively mediates and moderates the association of positive events and subjective happiness. These findings do not solely highlight the link between well-being and savouring but additionally imply the role of savouring as a trainable cognition acting as a factor of resilience.

### **Savouring as a Resource of Resilience to Buffer Negative Emotions**

Although, savouring is considered as regulatory behaviour to enhance positive emotions (Tugade & Frederickson, 2007), some studies suggested its effectiveness in down-regulating negative emotions (e.g., Hurley & Kwon, 2012; Hurley & Kwon, 2013; Smith & Hanni, 2017). Assumably due to the reason that savouring either amplifies positive emotion inducing thoughts or by dampening those thoughts aimed to reduce positive emotions (Jose et al., 2012; Smith & Hanni, 2017). The dampening effect possibly explains how savouring reduces negative emotions, while being an up-regulatory strategy of positive emotions.

For instance, individuals who regularly seek for feeling and veritably experience pleasant emotions might be more likely to think of positive experiences (Jose et al., 2012) when feeling down to decrease the intensity of negative emotions. This cognitive pattern might be activated during times of unpleasurable, which, presumably, induce negative affect, and result in a buffer for experiencing those emotions. Accordingly, savouring might moderate the association between negative events and the intensity of negative emotions. Ma et al. (2020) investigated the moderation role of trait savouring on the association between those to constructs and found that higher perceived savouring skills were linked to lower rates of daily negative affect und events. Additionally, the buffer effect of savouring on negative emotions can be related to the possibility of savouring being part of the repertoire of resilience.

Resilience resources act as buffering processes during times of disturbances to directly reduce their negative impact (Connor & Davidson, 2003). Savouring enhances well-being by paying attention to positive events, which in turn, evoke positive emotions (Tugade & Frederickson, 2007). Hereby, savouring is the way of how an individual reacts to a negative mood or disturbance and, conceivably, acts as the buffer process to reduce negative impacts. According to Smith and Hollinger-Smith (2014) in older adults savouring associates with lower

depression when resilience acts as a moderator, however, more strongly for participants scoring lower on resilience.

### **Experience Sampling Method**

Since past research mostly focused on savouring and its associations with resilience and negative affect as trait measures using daily diary methods (e.g., Ma et al., 2020; McMakin et al., 2011; Quoidbach et al., 2009; Smith & Hanni, 2017; Sytine et al., 2018), the daily flows of negative emotions and the conceivable role of momentary savouring as the buffer effect of trait resilience to reduce negative emotions in daily life are missing. By acknowledging these findings it is possible to bring the set of savouring, negative emotions and unpleasurable events on a micro-level, by investigating people with numerous measurement points in their daily lives using the experience sampling method (ESM).

ESM enables the collection of the fluctuations of constructs during daily lives in the form of an intensive ecological longitudinal study (Larson & Csikszentmihalyi, 2014; Myin-Germeys & Kuppens, 2021). According to Larson and Csikszentmihalyi (2014) the difference of ESM studies to cross-sectional or less intensive study designs is, that ESM enables the collection of ever-changing state measures at random occasions throughout the day instead of stable trait measures at one measurement point. ESM is established in a way of self-reported data of the participants and relies on the motivation and trustworthiness of the respondents to create reliable files of data (Larson & Csikszentmihalyi, 2014; Myin-Germeys & Kuppens, 2021). ESM prolongs the aim to investigate the fluctuations of negative affect and unpleasurable events as well as the role of savouring and resilience in this context. It is possible to detect whether or not individuals score high on momentary savouring in moments of negative affect or unpleasurable events, in the sense of buffering the impact of negativity. According to Curran and Bauer (2011) longitudinal studies enable the investigation of this micro-level data.

### **The Current Study**

Considering the information above, the current study aims to examine the associations of momentary savouring, momentary negative affect, momentary unpleasurable events and their association with trait resilience. More specifically the following research questions (RQ) will be investigated:

*RQ<sub>1</sub>: What is the association between trait resilience and momentary savouring?* With the first research question the general association of savouring in daily life and trait resilience will be assessed. Based on past research were trait savouring and trait resilience related whereby the former positively influences how individuals react to disturbing situations. It is assumed

that momentary savouring and trait resilience are positively correlated so that higher scores in one of each is associated with higher scores in the other.

*RQ<sub>2</sub>: Does trait resilience moderate the association between momentary savouring and momentary negative affect?* The second research question aims to investigate whether trait resilience influences the association of savouring and negative affect in daily life. Based on past research does trait resilience moderate the association of trait savouring and negative mood. Additionally, does the level of resilience predict the intensity of the effect of savouring on negative affect. Therefore, it is assumed that trait resilience positively moderates the effect of savouring on reducing negative affect in daily life.

*RQ<sub>3</sub>: Does momentary savouring moderate the association between unpleasurable events and momentary negative affect?* The last research question aims to examine the possible moderator role of momentary savouring on the association between unpleasurable events and momentary negative affect. Some studies suggest the effectiveness of savouring as a downregulatory strategy. Therefore, it is assumed that momentary savouring decreases the intensity of momentary negative affect and unpleasurable event, by concentrating on positive aspects of a situation.

## **Method**

### **Participants**

In total, 107 participants volunteered in the study. Compared to other ESM studies this was a rather big sample size, since on average ESM studies contained 53 participants (Van Berkel et al., 2017). However, the researchers themselves as well as participants who neither did answer the baseline questionnaire nor responded to at least 50% of the daily questionnaires were excluded from the analysis through complete case deletion. The cut-off score was set for different reasons. On the one hand, researchers cannot expect the respondents to be available during all measurement points based on the length and intensity of the study. This cut-off score allows the researchers to, withal, have enough data to reliably carry out analysis and decrease the pressure to answer for the participants. On the other hand, Conner and Lehman (2012) explain that setting the cut-off score to at least 50% participation rate is a common approach in ESM depending on the amount of measurement points, items, and data needed for analysis.

Participants were recruited using convenience sampling method, a non-probability sampling method due to the extensive timely investment of the participants. Thus, motivation as well as timely availability needed to be ensured beforehand (Conner & Lehman, 2012). Consequently, researchers were able to informally contact relatives and friends to participate using social messengers since their willingness to take part in the study was likely to be higher

due to the personal connectedness. Furthermore, the Sona Credit System of the University of Twente (UT) was used as a second approach. Here, students from the UT exchanged their participation in the study with 3.5 credits needed to complete their Bachelors in social sciences. Additionally, participants needed to be at least 18-years old, be fluent in the English language and have a smartphone with the app Ethica installed. According to Conner and Lehman (2012) smartphones are good application tools for ESM studies.

### **Design and Procedure**

After the study was approved by the Ethics Committee of Behavioural, Management and Social Sciences of the University of Twente (#220285) the researchers implemented the items and questionnaires in the online environment of Ethica Data (<https://ethicadata.com>). Ethica is a mobile application, which enables the collection of data from participants with little effort and in relation to daily routines. Moreover, Ethica uses a user-friendly layout and ensures high privacy standards (Ethica, 2022). Afterwards, the study was piloted for three days to test for triggers, possible difficulties, and the functioning of questionnaires as intended.

After the pilot was concluded, the actual data collection started. Participants were invited to the online environment by providing the Ethica study code via email. There, respondents were explained to fill out four daily questionnaires, taking about two to three minutes to complete, four times a day over a period of 14 consecutive days as well as one baseline questionnaire, taking approximately 15 minutes to answer, containing information about them as a person as well as their mental well-being and emotion regulation strategies. After reading the study information, participants needed to actively agree to the online informed consent (see Appendix A). The study started at Wednesday 13-04-2022 and was closed at Wednesday 27-04-2022 for all participants. Following the suggestion of Conner and Lehman (2012) ESM studies should last between three days to three weeks, thus, having a period of 14 days seems to be appropriate based on the four measurement points per day. Moreover, this time period may enable a good response rate of participants (Van Berkel et al., 2017).

Daily questionnaires, containing state measures (see Appendix B), were triggered in form of notifications at random moments within fixed time intervals, thus, signal-contingent sampling was used, which is a common approach in ESM studies (Yearick, 2017). Hereby, the participants burden is decreased by enabling them to answer questions within these set time intervals while being awake. Furthermore, fixed time intervals were from the same length for each measurement point (Conner & Lehman, 2012; Myin-Germeys & Kuppens, 2021). The pre-defined notification intervals were between 10.00 and 11.00, 13.30 and 14.30, 17.00 and 18.00 as well as 20.30 and 21.30 (see Figure 1). Within those time-intervals the notification



was randomly triggered. One hour after the notification was generated, the daily questionnaires expired. Moreover, each of the daily questionnaires were equal in the context of items and their order.

Beginning at the second day the baseline questionnaire, a one-time assessment containing trait measures (see Appendix C), was triggered, however, differently to the daily questionnaires, it did not expire after one hour and was available until the last day of the study enabling some flexibility for the participants to answer.

### Figure 1

*Availability and Expiration of Daily Questionnaires and Baseline Questionnaire*

	<b>Daily Questionnaires</b>			
	<i>Morning</i>	<i>Afternoon</i>	<i>Late Afternoon</i>	<i>Night</i>
<i>Randomly triggered between</i>	10.00 – 11.00	13.30 – 14.30	17.00 – 18.00	20.30 – 21.30
<i>Expired after</i>	one hour			
	<b>Baseline Questionnaire</b>			
<i>Fixed triggered</i>	second day of the study			
<i>Expired</i>	last day of the study			

### Materials

Due to the cooperation of different researchers in this study additional trait questionnaires and state items were included. The trait measures contained: Mental Health Continuum Short Form, General Anxiety Disorder 7, Perceived Stress Scale, and Cognitive Emotion Regulation Questionnaire. The state items were: nine concerning six different emotion regulation strategies, one concerning stressful events, one about gratitude, and one about the social context. However, the resulting variables are unimportant for the paper at hand and are mentioned for the means of completeness only.

#### *Trait Measures*

**Resilience.** To measure the degree of resilience, the Brief Resilience Scale (BRS) with six items was used (Smith et al., 2008). Respondents rated their agreement to the statements on a 5-point Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). The scale was scored by calculating the mean of the items, whereby three items (2, 4, 6) needed to be reversed coded first. Hereby, higher scores indicated a higher degree of perceived resilience. According

to Fung (2020) internal consistency can be considered as acceptable ( $\alpha = .71$ ) with similar sample characteristics, however, different ethnicity in relation to the current study. Reliability in the study at hand was higher, therefore, can be considered as good ( $\alpha = .81$ ).

**Savouring the Moment.** To measure one's ability to savour the moment, the subscale of Savoring the Moment of the Savoring Beliefs Inventory (SBI) was included. Participants needed to rate their agreement to eight items on a 7-point Likert scale ranging from 1 (Strongly disagree) to 7 (Strongly agree). The scale was scored by calculating the mean of the items, whereby four items (2, 8, 14, 30) firstly needed to be reversed coded. Hereby, higher scores indicated a higher likelihood of savouring the moment. According to Bryant (2003) internal consistency can be considered as moderate to good by producing Cronbach alphas between .68 and .89, depending on the sample population. The current sample produced good internal consistency ( $\alpha = .87$ ) with similar sample characteristics as by Bryant (2003).

**Depressive Symptoms.** Lastly, the Patient Health Questionnaire 9 (PHQ-9) was included as a mean to ensure validity of the trait items measuring negative affect. It was assumed that these items correlate with the measure of depressive symptoms by the PHQ-9. Here, participants needed to agree to nine items on a 5-point Likert scale ranging from 0 (Not at all) to 4 (Nearly every day). The sum of the items was used to score this instrument. Here, high scores indicated severe symptoms of depression. According to Zhou et al. (2020) reliability among a sample of German university students can be considered as good ( $\alpha = .85$ ), which is marginally lower than in the current paper with a similar characteristics ( $\alpha = .88$ ).

### ***State Measures***

**Negative Affect in Daily Life.** To assess momentary negative affect of respondents, four items measuring state affect were included. Those were ranked on a 7-point Likert scale, ranging from 1 (Not at all) to 7 (Very much). Items used in this study, were commonly used in different ESM studies (Geschwind et al., 2011; Jans-Beken et al., 2019). Momentary negative affect was measured by asking respondents "*How 'anxious', 'irritable', 'down', 'sad' do you feel right now?*" separately. Scoring high on momentary negative affect indicated that respondents experienced more intense negative emotions within one hour. In order to ensure reliability of the items, split-half reliability was calculated (Hektner et al., 2007). Hereby, mean scores per person of week one and two were calculated separately and revealed a good correlation ( $r = .82, p < .001$ ) indicating consistency among the scores. Correlations with the PHQ-9 total score ensured convergent validity of the state measures by its positive and moderate magnitude ( $r = .53, p < .01$ ).

**Unpleasurable Events in Daily Life.** In order to measure unpleasurable events, a study protocol by Helmich et al. (2020) representing an open science data base of ESM items was used. Moreover, was the item previously used in a study of Geschwind et al. (2011). On a 7-point Likert scale ranging from -3 (very unpleasant) to 3 (very pleasant) respondents answered “*Think of the most striking event or activity in the last hour. How (un)pleasant was this event or activity?*”. Negative scores indicated the occurrence of an unpleasurable event, whereby -3 indicated that the related perception of this event was most negative. Originally, the item intended to measure stressful events, however, based on the use of the adjective ‘(un)pleasant’, labelling the item as measuring unpleasurable events seemed more applicable. Split-half reliability revealed good correlation ( $r = .5, p < .001$ ) indicating consistency among the scores of week one and two.

**Savouring in Daily Life.** To formulate an ESM item measuring momentary savouring, the Savoring Beliefs Inventory was used as a basis. Specifically, item 17 ‘I feel able to appreciate good things that happen to me’ from the SBI concerning savouring the present moment (Bryant, 2003) was reformulated into an ESM item. “*In the last hour, I was able to appreciate good things that happened to me*” was used in the current paper. A 7-point Likert scale ranging from 1 (not at all) to 7 (very much) was used, whereby higher numbers indicated higher likelihoods of having performed momentary savouring. The defined time interval was included since respondents were less likely to perform in a certain behaviour during answering the questionnaire but before and to ensure consistency among the formulation of the other state measures. Split-half reliability was considered as acceptable ( $r = .79, p < .001$ ) indicating that the scores of week one and two were consistent. By correlating this item with item 17 from the SBI convergent validity was ensured by its positive and moderate magnitude ( $r = .44, p < .01$ ).

### **Data Analysis**

Data from Ethica was imported to IBM SPSS Statistics 28. Variables unimportant for analysis were removed. Cases with a lower participation rate of 50% as well as the cases of the researchers (date = 07.04.2022) were deleted. Additionally, one variable time was included to identify the different measurement points throughout the participants.

To assess bivariate correlations using Pearson’s coefficient daily scores for momentary negative affect and momentary savouring per person were aggregated to derive person mean (PM) scores for each participant (Curran & Bauer, 2011). Additionally, momentary unpleasurable event was transformed into a dichotomous variable. Hereby, scores ranging from -3 to -1 indicated the occurrence of an unpleasurable event and scores from 0 to 3 did not. Scoring zero was included into the latter category, since it does not mark any intensity of an

unpleasurable event. Afterwards, means and standard deviations as well as Pearson correlation between momentary negative affect, momentary unpleasurable events, momentary savouring, trait resilience, trait savouring the moment and, depressive symptoms were assessed. Hereby, total scores of the trait items was used.

Due to missing data as well as the repeated measurement points creating a nested structure within participants, several linear mixed models (LMM) were used to answer the research questions. Additionally, it enables to assess estimated marginal (EM) means for the state variables. According to Black et al. (2012) LMM's are commonly used to deal with this multilevel structure. Based on the assumption of within person correlations the Repeated Covariance Type of First-order autoregressive was used for all LMM. Additionally, to make use of longitudinal data participants ID were included as repeated measures over different measurement points (time) in all LMM. The total score of the four momentary negative affect items was calculated per person over time and used in the corresponding LMM. Moreover, for all LMM first unstandardised then standardised z-scores were used. These different correlation coefficients were interpreted following the rule of Cohen (1988). Accordingly, associations were considered as followed:  $\beta < .3 = \text{weak}$ ;  $\beta = .3 - .5 = \text{moderate}$ ;  $\beta > .5 = \text{strong}$ .

With reference to the first RQ bivariate correlation of trait resilience and momentary savouring were assessed using Pearson's coefficient. Hereby, PM scores of momentary savouring and total scores of trait resilience were used.

To answer the second RQ the total score of momentary negative affect represented the outcome variable. Fixed covariates were momentary savouring and total scores of trait resilience. Moreover, an interaction term of those two variables was included to assess the moderation effect of trait resilience. Additionally, the moderation effect was visualised using a scatterplot. Therefore, all participants were grouped into either low or high levels of resilience based on the mean of the total scores of trait resilience. Group sizes were marginally unequal, whereby the low resilient group ( $N = 27$ ) was smaller than the high resilient group ( $N = 32$ ).

To answer the third RQ another LMM was performed. Hereby, the total score of momentary negative affect was the outcome variable and momentary unpleasurable events and momentary savouring the fixed covariates. Additionally, an interaction term of momentary unpleasurable events and momentary savouring was included to assess the possible moderation role of momentary savouring.

In order to visualise the results data was exported from SPSS to Microsoft Excel. There, combinations of line and dot plots were used. Additionally, to select case examples the standard deviation was added and subtracted from the mean scores of momentary savouring and

momentary negative affect. Cases scoring higher or lower than this range were selected as examples.

### Results

In total 107 participants volunteered in the study, however, 44.86% ( $n = 48$ ) cases were deleted either due to missing baseline questionnaires or because the requirement of answering 50% of the daily questionnaires were not met. The remaining 59 cases (55.14%) cases showed a satisfactory average response rate (76.6%) when compared with the average response rate of 69.9% mentioned by van Berkel et al. (2017).

The age ranged from 18 to 65 ( $M = 23.46$ ,  $SD = 8.01$ ). Most respondents were students (86.4%), from which 17 (8.67%) were employed. Additional information about the sample characteristics, such as nationality and education specifications can be seen in Table 1. Other nationalities included: Albanian, Ecuadorian, Finnish, Italian, Polish, Russian, and Turkish.

**Table 1**

*Sample Characteristics (N = 59)*

		<i>N</i>	<i>%</i>
Gender	Female	34	57.6
	Male	25	42.4
	Other	0	0
Nationality	Dutch	10	16.9
	German	41	69.5
	Other	8	13.6
Education	High School	51	86.4
	Bachelor	4	6.8
	Master	3	5.1
	HBO-associate	1	1.7
Occupation	Working	5	8.5
	Student	34	57.6
	Student and working	17	28.8
	Not working	2	3.4
	Other	1	1.7

Comparing the mean scores of trait resilience with results from Smith et al. (2008) the current sample scores slightly lower ( $M = 3.1$ ,  $SD = 0.71$ ) on trait resilience than a similar sample of students ( $M = 3.53$ ,  $SD = 0.68$ ). Likewise, was the mean score of savouring the moment relatively low with 36.42 ( $SD = 9.4$ ) than in a similar sample ( $M = 43.45$ ,  $SD = 7.37$ ) in a study of Hurley and Kwon (2013). Moreover, does a similar population score lower on

depressive symptoms with a mean of 6.77 ( $SD = 4.84$ ) (Zhou et al., 2020) than the current sample ( $M = 8.33$ ,  $SD = 5.79$ ). This suggests that the current sample showed more depressive symptoms with lower scores in the ability to react in a healthy manner to negative impacts and a lower likelihood to savour the moment compared to previous studies.

Against presumptions did not all expected variables correlate (see Table 2). For instance, no correlation was found between momentary negative affect and momentary savouring ( $r = -.25$ ,  $p = .06$ ) as well as trait resilience ( $r = -.18$ ,  $p = .18$ ). The remaining variables were weakly to moderately correlated in the expected direction.

**Table 2**

*Mean, Standard Deviation, and Inter-Correlations among Person Means of State and Summed Scores of Trait Measures*

Variable	<i>N</i>	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Momentary Savouring	59	4.02	0.97	-				
2. Momentary Unpleasurable Event	59	1.2	0.12	-.36**	-			
3. Momentary Negative Affect	59	2.18	0.77	-.25	.5**	-		
4. PHQ-9	59	8.42	5.9	-.35**	.26*	.53**	-	
5. BRS	59	3.1	0.72	.28*	-.41**	-.18	-.29**	-
6. SBI (savouring the moment subscale)	59	36.49	9.26	.44**	-.4**	-.42**	-.62**	.4**

\*  $p < .05$ . \*\*  $p < .01$ .

### **Association Between Trait Resilience and Momentary Savouring**

As expected were trait resilience and momentary savouring weakly to moderately associated in a positive direction ( $r = .28$ ,  $p < .05$ ). This indicated that higher scores of trait resilience related to higher scores of momentary savouring in daily life and vice versa (see Table 2). Thus, being more resilient corresponded to higher intensities of savouring the moment.

### **Moderation Effect of Trait Resilience on the Association Between Momentary Savouring and Momentary Negative Affect**

As can be seen in Table 3, trait resilience weakly moderated the association between momentary savouring and momentary negative affect in the expected positive direction ( $\beta = .03$ ,  $p < .05$ ). Thus, the higher the score in trait resilience the more strongly weakened the association between momentary savouring and momentary negative affect. However, looking at Figure 2 it appeared that the slope of the low resilient group was marginally steeper compared to the

high resilient group. Indicating that, contradictory to the general results from the LMM, the moderation effect was stronger for individuals identified as being low resilient. Nonetheless, the differences in the slopes were small and most likely non-significant.

**Table 3**

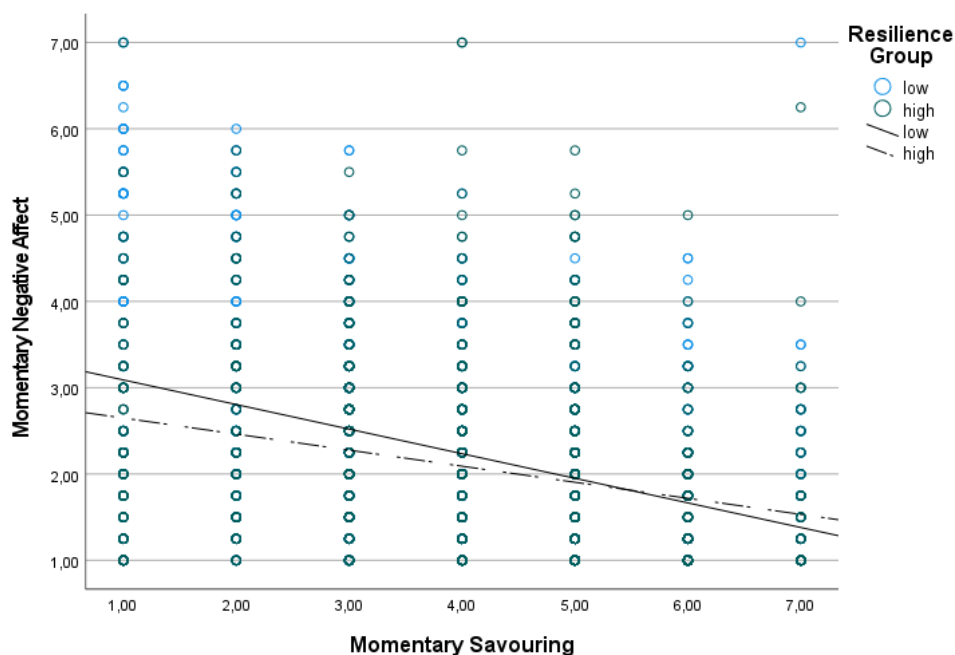
*Standardised and Unstandardised Estimates of Moderation Effect of Trait Resilience on the Association of Momentary Savouring and Momentary Negative Affect*

Parameter	$\beta$	<i>B</i>	<i>Std. Error</i>	<i>df</i>	<i>t</i>	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Intercept	.03	3.82	.27	1173.597	14.34	< .001	3.3	4.35
Trait Resilience	-.06	-0.23	.09	1242.195	-2.71	.007	-0.4	-0.06
Momentary Savouring	-.33	-0.33	.05	2252.747	-6.39	< .001	-0.43	-0.23
Interaction term <sup>a</sup>	.03	0.03	.02	2244.901	1.99	.046	0.001	0.06

<sup>a</sup> Trait Resilience \* Momentary Savouring

**Figure 2**

*Scatter Plot of Momentary Savouring and Momentary Negative Affect grouped by Trait Resilience*



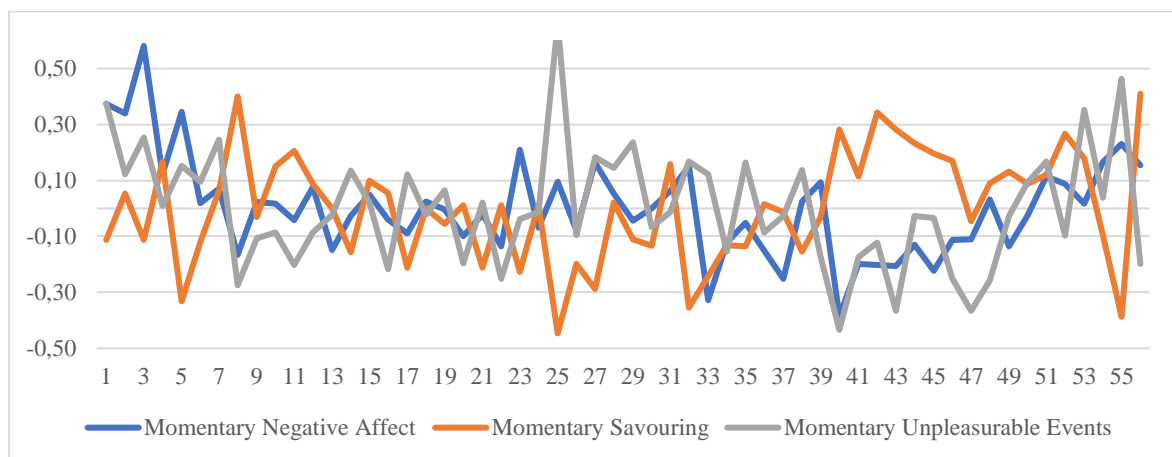
### Association of Momentary Negative Affect, Momentary Unpleasant Events and Momentary Savouring

Figure 3 shows fluctuations of the state measures negative affect, unpleasant events and savouring over time using EM means of the z-scores. Momentary savouring appeared to behave in the opposite direction of the covarying measures momentary negative affect and unpleasant events.

Especially measurement point 25 showed a peak in momentary unpleasant events in a positive magnitude while momentary savouring reached a peak in the negative direction. Conversely, measurement points 39 to 47 displayed how state savouring increased while momentary negative affect and the momentary unpleasant events decreased. Interestingly, after a high intensity of negative event and related higher negative emotions the following measurement point showed an increase in momentary savouring.

#### Figure 3

*Line Plot for Estimated Marginal Means of the Z-Scores of Momentary Negative Affect, Savouring and Unpleasant Events per Measurement Point*

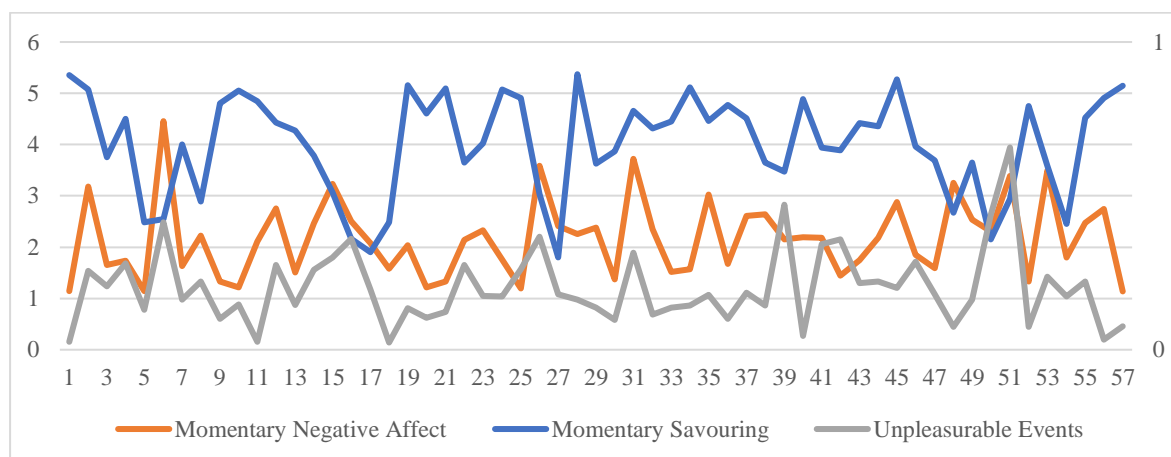


Additionally, Figure 4 visualises the person means of momentary negative affect, momentary savouring and momentary unpleasant events per participant. There, it is visible how momentary negative affect and momentary savouring behave in the opposite direction. Likewise, higher person mean scores appeared to relate with higher scores of unpleasant events. However, person mean of momentary savouring were mostly higher than negative affect and unpleasant events.



**Figure 4**

*Line Plot for Person Means of Momentary Negative Affect, Momentary Savouring and Momentary Unpleasant Events per Participant*



Generally, these two figures demonstrated that momentary negative affect related to higher scores in momentary unpleasant events and that both constructs negatively corresponded to the use of savouring in daily life. Nonetheless, participant six and 48 (see Figure 4) did not follow the described pattern, so that in those cases higher scores in momentary negative affect associated with lower scores in momentary savouring, indicating variability within participants.

#### **Moderation Effect of Momentary Savouring on the Association Between Momentary Negative Affect and Unpleasant Events**

Momentary savouring weakly moderated the association between unpleasant events and negative affect as expected in a negative magnitude ( $\beta = -.08, p < .001$ ). Specifically, the higher the level of momentary savouring the weaker the association between momentary unpleasant events and momentary negative affect. Details about the estimates can be found in Table 4.

**Table 4**

*Standardised and Unstandardised Estimates of Moderation Effect of Momentary Savouring on the Association of Momentary Unpleasant Events and Momentary Negative Affect*

Parameter	$\beta$	<i>B</i>	<i>Std. Error</i>	<i>df</i>	<i>t</i>	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Intercept	.01	2.75	.07	1711.946	40.03	< .001	2.61	2.88
Momentary savouring	-.28	-0.16	.01	2239.176	-12.34	< .001	-0.19	-0.14
Unpleasant events	.14	0.92	.1	1960.384	9.32	< .001	0.73	1.11
Interaction term <sup>a</sup>	-.08	-0.13	.03	1915.828	-4.9	< .001	-0.18	-0.08

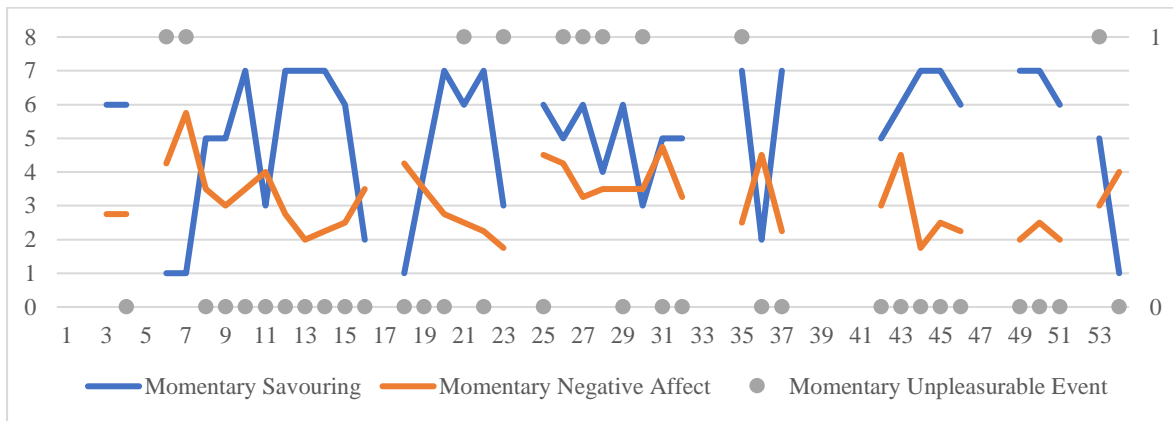
<sup>a</sup> Momentary unpleasant events \* Momentary savouring

### ***Case Examples***

Interestingly, participant 53014 scored higher than the average of the current sample on both momentary negative affect and momentary savouring (see Figure 5). The plot indicated that within this respondent, observed momentary negative affect and daily savouring behaved in opposite directions. Interesting were measurement points five to 13 as well as 16 to 23, where higher scores in momentary savouring corresponded to lower experiences of momentary negative affect. Additionally, measurement points six and 36 showed the opposite. Lower scores of momentary savouring related to more intense negative emotions at the present moment. Additionally, the measurement point after the occurrence of an unpleasant event showed an increase in the use of savouring and a small decrease in negative affect.

**Figure 5**

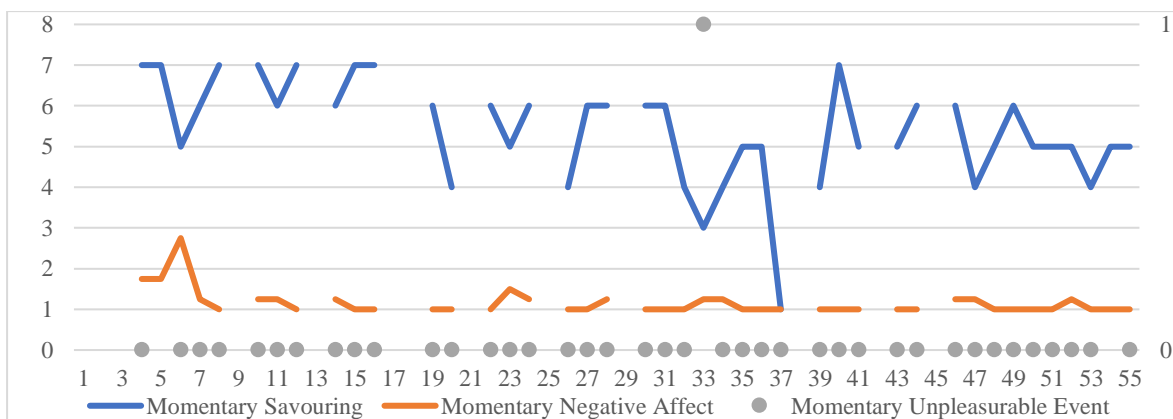
*Line and Dot Plot of Observed Scores of Momentary Savouring, Negative Affect and Unpleasant Events of Participant 53014*



By looking at Figure 6 observed scores of a participant (ID = 53019) scoring high on momentary savouring and low on momentary negative affect compared to the sample mean it can be seen that both constructs covary with each other in opposite directions. Apparently, did this participant experienced an unpleasurable event once during the time of the study at measurement point 33. Here, momentary savouring decreased extremely compared to the before going values while momentary negative affect showed a little increase. Adding to that, in the measurement point following the unpleasurable event savouring increased again. Additionally, the same dynamic was observed during measurement point six, whereby no unpleasurable event was reported and savouring increased after the intensity of negative emotions reached its peak.

**Figure 6**

*Line and Dot Plot of Observed Scores of Momentary Savouring, Negative Affect and Unpleasant Events of Participant 53019*

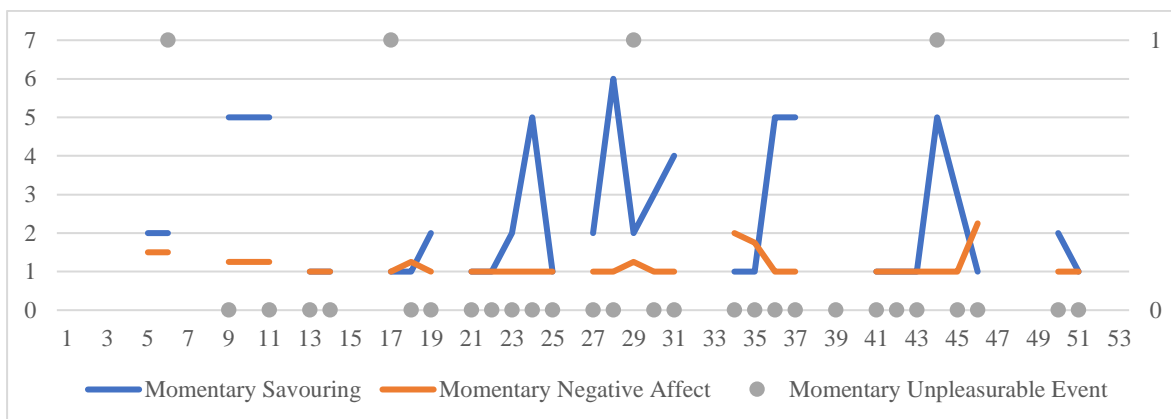


Figures 5 and 6 showed that in these specific cases observed scores in momentary savouring and momentary negative affect corresponded negatively to each other, indicating that higher scores in savouring the moment were corresponded to lower scores in experienced negative affect and vice versa. However, a contrary case was included in Figure 7 so visualise the possible variability between- and within participants.

Here, the participant (ID = 53005) scored lower than the average on both – momentary savouring and momentary negative affect. The scores did not show the pattern as the participants before, so that no clear correspondence between higher rates of daily savouring and negative affect can be found. Apparently, the affect of this participant was stable over time while daily savouring independently varied during the study period.

### Figure 7

*Line and Dot Plot of Observed Scores of Momentary Savouring, Negative Affect and Unpleasant Events of Participant 53005*



### Discussion

The current paper aimed to investigate the association of trait resilience and momentary savouring, and how trait resilience moderates the association between savouring and negative affect in daily life. Additionally, the moderation effect of momentary savouring on the association between unpleasant events and negative affect in daily life was assessed. It was found that trait resilience and momentary savouring were weakly and positively associated in the current sample. Adding to that, trait resilience weakly strengthened the impact of savouring on negative emotions in daily life, whereby a difference in individuals scoring high or low on resilience was found. Lastly, savouring the moment weakly moderated the association between unpleasant events and negative affect in daily life. As such momentary savouring weakened the association between momentary negative emotions and unpleasant events.

### **The Association Between Trait Resilience and Momentary Savouring**

The study at hand expands the current knowledge about the relation of trait savouring and trait resilience (Smith & Hanni, 2017) as well as the general association of emotion regulation strategies and trait resilience (Connor & Davidson, 2003; Tugade & Frederickson, 2007) by measuring the use of savouring the moment in daily life. Appreciating momentary experiences was performed more frequently during the study period if the ability to adequately react to disturbances was higher. The reason can be, that according to Riopel (2022) as well as Connor and Davidson (2003) emotion regulation in general can be considered as being part of the characteristic of resilient people. As such, savouring is a specific form of emotion regulation aiming to upregulate positive moods (Tugade & Frederickson, 2007).

Moreover, Cheung and Ng (2020) as well as Smith et al. (2013) suggest that savouring is an act of mindfulness. The reason is, that during the process of savouring individuals consciously shift their attention to positive aspects. Hence, by concentrating on these aspects of situations the intensity or impact of distress on emotions is reduced, in turn, help to buffer negative emotions. Thus, the buffer effect of daily savouring may be the process of coping and therefore associates with trait resilience as mindfulness does (Smith et al., 2013).

### **The Moderation Effect of Trait Resilience on the Association Between Momentary Savouring and Momentary Negative Affect**

Past research focused on how trait resilience strengthened the relation between trait savouring and happiness (Smith & Hollinger-Smith, 2014), although researchers reported that trait savouring might be more useful in decreasing negative emotions than enhancing positive ones (Hurley & Kwon, 2012; Hurley & Kwon, 2013). In the study at hand these results were expanded by finding that trait resilience strengthened the impact of daily savouring on reducing negative emotions. A possible explanation on the effect of savouring on negative emotions in daily life in the context of being moderated by resilience might be that savouring can be considered as an act of mindfulness as explained before (Cheung & Ng, 2020; Smith et al., 2013).

By considering savouring in the means of its purpose – enhancing or maintaining positive emotions by concentrating on the event that evoked this emotion (Bryant & Veroff, 2017; Tugade & Frederickson, 2007) – it is conceivable that more resilient individuals engage in savouring automatically to counteract negative emotions by concentrating on positive aspects of the current situation. Thus, the negative impact is decreased. Tugade and Frederickson (2007) argue that positive emotion regulation strategies might be ‘intelligently’ used from more resilient people during unpleasurable events. For instance, using humour, trying to relax or

being optimistic to counteract the intensity of negative emotions. The current study suggests, that either daily savouring associates with one of these buffering behaviours or that momentary savouring is a trainable state behaviour directly linked to trait resilience. At the moment, savouring was solely considered to promote resilience or being positively correlated to it (Smith & Hanni, 2017; Sytine et al., 2018; Tugade & Frederickson, 2007).

Nonetheless, the scatterplot showed that lower scores of resilience associate with stronger impacts of savouring on reducing negative emotions in daily life. This partly aligns with the findings of Smith and Hollinger-Smith (2014) who found that lower scores in trait resilience more strongly moderated the impact of trait savouring on happiness. It appeared that high resilient individuals accumulate positive emotions regularly (Tugade et al., 2004). Thus, people scoring low on resilience might experience a greater difference in their baseline mood by using savouring in daily life (Jose et al., 2012; Ma et al., 2020; Smith & Hollinger-Smith, 2014). Therefore, the effect of appreciating the present moment is experienced as more extreme among low resilient individuals in the sense that more resilient people experience the effect as common. Hence, the impact of momentary savouring on everyday emotions is decreased. This line of reasoning further supports the findings of Ma et al. (2020) who reported that savouring through anticipation has a greater impact on negative emotions and events in daily life, if participants had lower abilities to savour the moment.

However, this does not imply that low resilient individuals benefit more from the use of daily savouring on reducing the intensity of their negative affect in daily life. Although the effect of savouring is possibly stronger in short-term, concatenating on future goals is crucial. Strengthening savouring thereby decreasing the impact of negative emotions on an individual's health and, in turn, strengthening the confidence of how to react and approach difficult situations and enable individuals to manage their emotions (Smith & Hollinger-Smith, 2014).

### **The Moderation Effect of Momentary Savouring on the Association Between Momentary Unpleasant Events and Momentary Negative Affect**

Extending past research, the current study examined momentary savouring in daily life. Due to the nature of savouring as a positive emotion regulation strategy different studies mostly assessed its association with positive mood using daily diary methods (e.g. Jose et al., 2012; Smith & Hanni, 2017; Sytine et al., 2018). However, interventional studies suggested the importance of training savouring to reduce negative emotions and outcomes (Hurley & Kwon, 2012; Hurley & Kwon, 2013). Likewise, during the study period momentary savouring weakened the association of unpleasant events and negative affect in daily life, suggesting that shifting one's attention to positive aspects changes how emotions are perceived after

encountering an unpleasurable event. However, associations were considered weakly, so that daily savouring may decrease specific negative states more strongly. This would align with the findings of Carl et al. (2014) and Chiu et al. (2019) who found that savouring was most effective in decreasing anxiety symptoms.

Nevertheless, current findings support and expand an ESM study conducted by Ma et al. (2020) who found that trait savouring through anticipation moderated the association of negative emotions and negative events in daily life. The reason why an emotion regulation strategy aimed to increase positive affect decreases negative mood might be that, according to Quoidbach et al. (2010) different savouring strategies lead to different outcomes. It is conceivable that solely paying attention to positive aspects of the present moment lead to shadowing negative aspects. In turn, the impact of experienced negative events on negative mood was reduced (Smith & Hanni, 2017). This is supported by decreases in negative mood after encountering an unpleasurable event while daily savouring increased after the incident.

By measuring fluctuations of savouring in daily life, findings from the ESM study by Ma et al. (2020) was extended. Although in their research, savouring associates positively with reports of negative events, in the current study momentary savouring followed consecutively after the report of an unpleasurable event. Thus, momentary savouring was higher not during times of unpleasure but after. However, the difference can be explained by the operationalisation of savouring as a trait measure by Ma et al. (2020), while being a state measure in the current paper. Additionally, momentary negative affect decreased during these measurement points, which aligns with the findings by Ma et al. (2020) that trait savouring down-regulates negative mood.

### **Strengths and Limitations**

Strength of the current study is its design. The longitudinal experience sampling design enabled in situ collection of everyday data over a two-week period. Thus, a broad collection (a total of 56 measurement points) of fluctuations of momentary savouring, negative affect and unpleasurable events in the natural setting of participants has been assessed, which increased ecological validity. Additionally, retrospective recall-bias was reduced, since participants needed to answer questionnaires within one hour after they received a notification (Myin-Germeys et al., 2018; van Berkel et al., 2018).

Despite the strength of the methodology some limitations need to be accounted for. Firstly, results from the current study may not be generalisable and representative for the general population, since most respondents were young adults in university with a German background making the sample homogenous. Additionally, current scores in the state measures

may be skewed since the sample scored comparably higher on depressive symptoms, lower on the ability to cope and the belief to savour. It is imaginable that the Covid-19 pandemic still influences the mental health of the sample.

Secondly, not only were most of the associations considered as weakly but was the study additionally not experimentally modified so that on the one hand conclusions should be taken with caution and on the other hand can assumptions about causalities not be drawn. For instance, it is not ensured that negative affect after unpleasurable events decreased because participants used savouring in daily life. Likewise, it cannot be excluded whether negative affect lead participants to rate events as unpleasurable so that conclusions about temporal precedence are hard to make. Additionally, the difference in the slopes of low and high resilient individuals was not tested for significance and served as a visualisation purpose only.

Thirdly, savouring is originally a positive emotion regulation strategy and aims to enhance positive mood (Bryant & Veroff, 2017; Tugade & Frederickson, 2007). However, in the current study it aimed to measure negative affect in the participants without looking at changes in positive mood. Although past research found evidence that savouring can reduce negative affect (Hurley & Kwon, 2012; Hurley & Kwon; 2013) the possibility that other emotion regulation or coping strategies lead to a decrease in negative mood remains. Adding to that, the researchers formulated a new state item to measure savouring which showed moderate correlation with the original item from the Savoring Beliefs Inventory, however, further investigations of validity of the measure need to be made.

### **Future Research and Implications**

The current study expanded the knowledge of the positive emotion regulation strategy savouring by measuring it as a state item. However, future research may investigate psychometric properties of momentary savouring by using the daily diary method and examine qualitative data to determine related behaviours and cognitive patterns in a natural setting of the participants. A similar approach was taken by Jose et al. (2012), however, is up to now, the only study using the diary method, to measure savouring in means of state measures.

Additionally, future research may focus on daily savouring and its possible effect on decreasing different negative emotions. It is imaginable that daily savouring differently affects distinct negative emotions in daily life. For instance, it may be that appreciating the present moment has a greater effect on emotions with a high level arousal such as anxiousness while it may not be as affective in decreasing low level arousal emotions (Carl et al., 2014; Chiu et al., 2019). Adding to that, interventional studies may use the findings from the current paper to strengthen daily savouring skills and assessing its effect on negative mood and affective



disorders as well as trait resilience. Both findings can have further implications in the clinical setting since a trainable behaviour and cognitive pattern could have been identified in decreasing negative affect.

Another area of interest may lay in the association of trait resilience and daily savouring. Although it is known that emotion regulation generally belongs to resilient individuals (Connor & Davidson, 2003; Riopel, 2022) savouring in daily life is one specific observed construct. By using factor or network analytical approaches it can be determined if momentary savouring can be included in the repertoire of resilience and which other variables can be from importance.

Moreover, by using cross-lagged models to determine which of the variables – unpleasurable events or negative affect – precedes the other one it can be determined whether unpleasurable events influence the mood of individuals or if events are labelled as unpleasurable because of the affective state before. To ensure that, further randomised controlled trails may investigate the casual relationship of these two constructs. Adding to that, to determine whether savouring in daily life precedes negative affect or if it is turned around, the same approach can be taken.

Moreover, the current study focused on average and observed estimates of savouring, unpleasurable events and negative affect in daily life. Future research may focus on disentangling between- and within-person associations since it is assumed that the current study much likely has high variability in its measures (Kraiss et al., 2022). While there may be an association between savouring and negative affect in daily life within some individuals this does not necessarily be the case for all individuals.

## **Conclusion**

The study showed that higher scores of trait resilience associate with higher scores in the use of momentary savouring in daily life and vice versa. Additionally, resilience moderated the association between momentary savouring and momentary negative affect, implying that both – savouring in daily life and resilience – help to decrease negative emotions. This is in line, with savouring moderating the association between unpleasurable events and negative affect in daily life. It is likely that savouring acts as a resource of resilience in buffering negative impacts of negative emotions and events.

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## **Appendix A**

### **Informed Consent**

Dear participant,

Thank you for your participation in this study. Before you participate, it is important that you understand the goal of this research and what the study will ask from you. The purpose of this study is to find out mental health is related to the way you deal with feelings in daily life. To explore this relationship, we want to measure fluctuations in emotions in daily life.

For this study, we will ask you to fill in several questionnaires on your mobile phone. All questionnaires will be completed in the Ethica app. The study will start with a questionnaire concerning your demographics and general mental health. This initial questionnaire will take about 20 minutes to complete. Afterwards, you will receive four questionnaires per day for a period of two weeks. Notifications will remind you about the next questionnaire. One daily questionnaire takes approximately 3 minutes to complete. It is important that you answer the questionnaires as soon as possible. Please make sure that you turn on the notifications for the Ethica app on your mobile device.

The information that we collect from this research project will be kept confidential. This means that only the researchers have insight into your answers. All personal data (such as age, gender etc.) will be anonymized and will not be published and/or given to a third party. Your participation in this study is voluntary. You are free to withdraw from this study at any time and without giving a reason.

#### *Contact information*

If you have any questions regarding this study, you can contact the researchers of this research project Jasmin Wallner ([j.wallner@student.utwente.nl](mailto:j.wallner@student.utwente.nl)), Paula Oberle ([p.v.oberle@student.utwente.nl](mailto:p.v.oberle@student.utwente.nl)), Natalie Koop ([n.koop@student.utwente.nl](mailto:n.koop@student.utwente.nl)), Caroline Dauer ([v.c.dauer@student.utwente.nl](mailto:v.c.dauer@student.utwente.nl)), Kia Lemmen ([k.r.lemmen@student.utwente.nl](mailto:k.r.lemmen@student.utwente.nl)) and Jenny Schwabe ([j.schwabe@student.utwente.nl](mailto:j.schwabe@student.utwente.nl)).

#### *Consent*

I have read and understood the information provided and had the opportunity to ask questions. I understand that my participation is voluntary and that I am able to withdraw at any time, without a reason or cost. I hereby voluntarily agree to take part in this study.



**Appendix B**  
**Daily Questionnaires**

*Negative Affect*

1. How anxious do you feel right now?
2. How irritable do you feel right now?
3. How down do you feel right now?
4. How sad do you feel right now?
  - a. 1 (not at all) to 7 (very much)

*Unpleasant event*

1. Think of the most striking event or activity in the last hour. How (un)pleasant was this event or activity?
  - a. -3 (very unpleasant) to 3 (very pleasant)

*Momentary savouring*

1. In the last hour, I was able to appreciate good things that happened to me.
  - a. 1 (not at all) to 7 (very much)

## Appendix C

### Base line questionnaire

#### *Demographics*

- Age: How old are you?
- Gender: What gender do you identify as? Female, Male, Other, If you prefer not to specify, you can skip this question
- Nationality: What is your nationality? Dutch, German, Other
- Occupation: What is your current occupation? Working, Self-employed, Student, Studying and working, Not working, Other
- Education: What is the highest degree or level of school that you have completed? *If currently enrolled, mark the highest degree already received.* Middle school (such as MBO, MTS, MEAO or Haupt- or Realschule, High school (such as HAVO, VWO, HBS or Gymnasium/Berufsschule/Berufskolleg), Bachelor, Master, PhD, Other
- Sona: If you are a participant of SONA please indicate here your SONA number. Note: You can find the number in the confirmation email received from SONA. It is important to give us your number because otherwise, we cannot identify you and grant you the points. If you are not a SONA participant, you can skip this question.

#### *PHQ-9*

Over the last 2 weeks, how often have you been bothered by any of the following problems?

1. Little interest or pleasure in doing things
2. Feeling down, depressed, or hopeless
3. Trouble falling or staying asleep, or sleeping too much
4. Feeling tired or having little energy
5. Poor appetite or overeating
6. Feeling bad about yourself or that you are a failure or have let yourself or your family down
7. Trouble concentrating on things, such as reading the newspaper or watching television
8. Moving or speaking so slowly that other people could have noticed. Or the opposite being so fidgety or restless that you have been moving around a lot more than usual
9. Thoughts that you would be better off dead, or of hurting yourself
  - a) Not at all

- b) Several days
- c) More than half the days
- d) Nearly every day

*Present Savoring Subscale Savoring Beliefs Inventory*

1. It's hard for me to hang onto a good feeling for very long.\*
2. I know how to make the most of a good time.
3. When it comes to enjoying myself, I'm my own "worst enemy."\*
4. When something good happens, I can make my enjoyment of it last longer by thinking or doing certain things.
5. I can't seem to capture the joy of happy moments.\*
6. I feel fully able to appreciate good things that happen to me.
7. I don't enjoy things as much as I should.\*
8. It's easy for me to enjoy myself when I want to.
  - a. 1 (strongly disagree) to 7 (strongly agree)
  - b. \* reverse coded items

*Brief Resilience Scale*

1. I tend to bounce back quickly after hard times.
2. I have a hard time making it through stressful events.
3. It does not take me long to recover from a stressful event.
4. It is hard for me to snap back when something bad happens.
5. I usually come through difficult times with little trouble.
6. I tend to take a long time to get over setbacks in my life.
  - a. 1 (strongly disagree) to 5 (strongly agree)