



Master thesis

A Longitudinal Study about the Predictors of  
Positive Emotions: Resilience,  
Acceptance, and Psychological  
Well-being.

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## **Abstract**

*Introduction* In recent years the scientific interest in positive emotions grew and became more relevant in theory and practice. In order to contribute to the enhancement of experiencing positive emotions, this study aims to explore resilience, acceptance, and psychological well-being as the predictors of positive emotions in daily life. Theory of the upwards spiral of positive emotions supports the assumption that these three predict positive emotions.

*Methods* In this longitudinal study the predictors resilience, acceptance, and psychological well-being were assessed at baseline and the aggregated mean of the experience of positive emotions on seven days was measured in the following week. The participants in this study (n=50) were instructed to use an app for one week in order to report their emotions.

*Results* Outcomes of a regression analysis showed that resilience, acceptance, and psychological well-being are predictors of positive emotions, and that psychological well-being is the most significant predictor among the three.

*Conclusion* Explanations for these outcomes are found in literature indicating that these predictors are related, and that resilience and acceptance are relevant contributors of psychological well-being.

# 1. Introduction

Emotions, especially positive ones, became a broader studied field in the line of positive psychology, a movement in psychology which focusses on mental health rather than mental illness. In positive psychology it is stated that the absence of psychopathology does not totally determine the presence of mental health or well-being (Hayes, Strosahl, & Wilson, 1999; Lamers, Westerhof, Bohlmeijer, ten Klooster, & Keyes, 2011). A significant body of empirical research clearly gives evidence of the two continua model of mental health (Keyes et al., 2008; Keyes, 2007), showing that mental health and mental illness are connected, however, they are distinct phenomena. One continuum describes the absence and presence of mental health, and the other describes the absence and presence of mental illness (Keyes, 2002; Keyes, 2010; Lamers et al., 2011; Westerhof & Keyes, 2010). These findings nourished the research in what contributes to the presence mental health and well-being. One contribution is experiencing regularly positive emotions.

Experiencing positive emotions serves as the central topic in this research, as well as possible predictors for frequently experiencing positive emotions in daily life. This research is carried out in order to find the strongest predictor of positive emotions among resilience, acceptance, and psychological well-being.

## 1.1. Benefits of positive emotions

The Broaden and Build theory of positive emotions was developed by Barbara Fredrickson in 1998. Experiencing positive emotions are the key point in this theory. It serves as an explanation for the impact that experiencing positive emotions has on the person's thought-and-action repertoire and other resources (Fredrickson, 2003; Cohn & Fredrickson, 2006). Fredrickson's inducement to develop the Broaden and Build theory was also a necessity, because positive emotions were less examined than negative ones. As positive emotions do not arise, when there is a problem, they are not studied when solution is needed (Fredrickson, 1998). Negative emotions, like fear, are evolutionary necessary for survival, but positive emotions are important in order to survive as well, however, the function of the emotions differs (Fredrickson, 2001). While positive emotions have a *broadening* effect on awareness, thoughts and actions, negative emotions compress this repertoire (Fredrickson, 2001). Negative emotions are associated with action tendencies that focus and narrow thoughts and actions, preparing to fight or flight (Tugade & Fredrickson, 2007). By *broadening* the repertoire over time, abilities and resources are *build*. These are psychological resources (e.g., optimism, resilience, and creativity), physical

resources (e.g., health and physical skills), intellectual resources (e.g., intellectual complexity), and social resources (e.g., friendships and social support networks) (Fredrickson, Tugade, Waugh, & Larkin, 2003). This results in more positive emotions and optimal mental health (Fredrickson, 2003). Furthermore positive emotions are a key component of happiness and well-being (Myers & Diener, 1995), they help people who experience distress to deal with their current situation and to move forward, and can be a useful response for coping with negative experiences (Tugade & Fredrickson, 2004). Positive emotions may provide solutions to problems generated by negative emotions (Fredrickson, 1998).

Fredrickson includes an upwards spiral (Figure 1) to the Broaden and Build theory that says that positive emotions lead to a broader repertoire which leads to prolonged resources when positive emotions arise. Therefore it can be seen as an upwards spiral of positive emotions increasing and improving continually overall well-being, (Fredrickson, 2001) and life satisfaction (Cohn & Fredrickson, 2006), again increasing the frequency of positive emotions in daily life. It means that, once positive emotions broaden the awareness and build resources, the built resources increase positive emotions again.

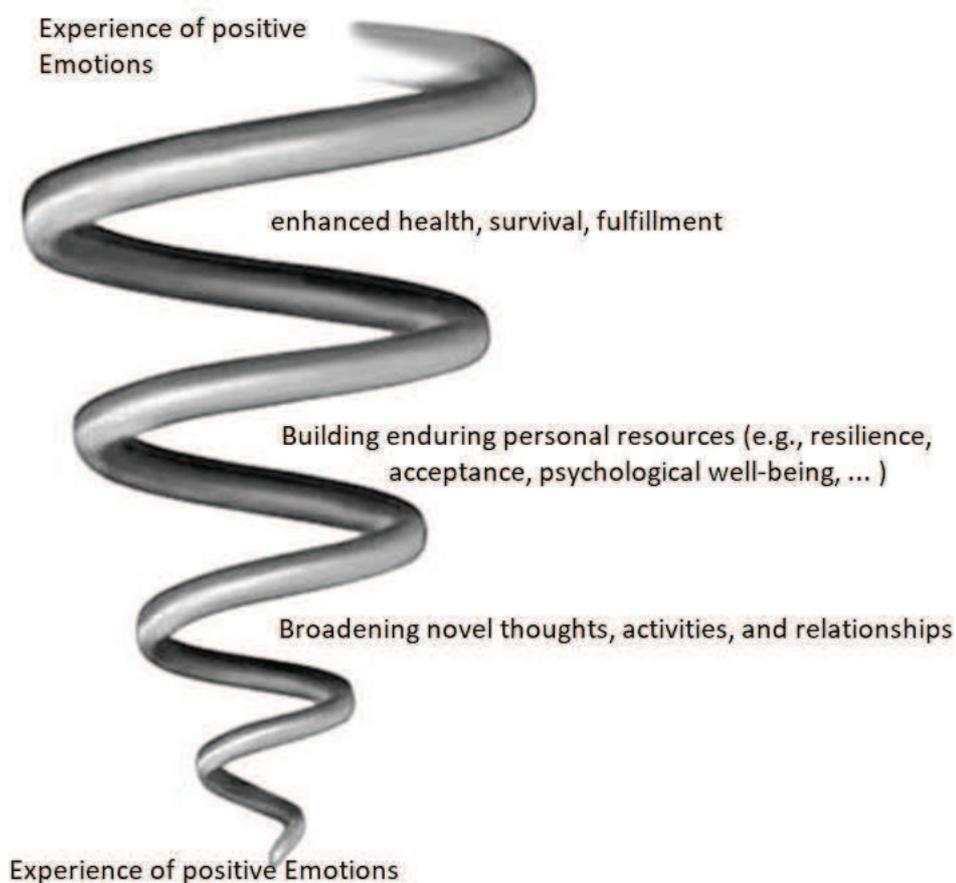


Figure 1. Based on the model of upwards spiral of The Broaden and Build Theory of positive emotions.

## 1.2 Possible predictors for positive emotions

In line with the Broaden and Build theory of positive emotions there may be many possible predictors for positive emotions. In this research, three of them, resilience, acceptance, and psychological well-being are tested and discussed.

### *Resilience*

Resilience is one part of Fredrickson's upwards spiral and therefore leading to experiencing positive emotions. It is a personal strength and coping resource (Tugade & Fredrickson, 2007) that is defined as "the process of adapting well in the face of adversity, trauma, tragedy, threats or significant sources of stress — such as family and relationship problems, serious health problems or workplace and financial stressors. It means bouncing back from difficult experiences" (American Psychological Association, 2014). In addition, resilience can be described as a capacity to recover or persist (Kuiper & Bannink, 2012) and to keep looking forward through and after a difficult period (Tugade & Fredrickson, 2007). According to Salovey, Bedell, Detweiler, and Mayer (1999), resilient people can be distinguished from less resilient people in their capacity of learning from difficult experiences and being able to use this knowledge in order to behave more effectively in the future. Optimism is a relevant facet of resilience (Fredrickson, Tugade, Waugh, & Larkin, 2003).

Resilience comes with a number of benefits. It is predicting higher expectation of life and general well-being (Diener & Chan, 2011), positive mental health (Abiola & Udofia, 2011) and positive emotions (Cohn et al., 2009; Tugade & Fredrickson, 2007). Experiencing positive emotions is effective in assisting high-resilient people to recover from stress (Ong et al., 2006) and from pain (Ong, Zautra, & Carrington Reid, 2010). Resilience predicts the ability to capitalize on positive emotions when coping with negative emotions, for instance using humor as an effective coping strategy with stressful circumstances. Positive emotions are useful in counteracting negative experiences and broadening thoughts and actions. In addition they are particularly beneficial for building resilience to stressful events and negative circumstances. (Tugade & Fredrickson, 2007). Studying the upwards spiral of positive emotions, Fredrickson and Joiner (2002) found resilience to predict expanded positive emotions over time.

### *Acceptance*

Acceptance is the ability to be open to painful feelings and thoughts rather than fighting them (Harris, 2010). Private events have to be experienced consciously and actively, and especially

when these internal experiences (e.g., thoughts, feelings, memories, and physical sensation) cause suffering they should not be tried to change in content or frequency (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). However, it is worth to be noted that the internal experiences are not seen as problematic themselves, but the responses to these experiences are (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). The habitual unwillingness to experience unpleasant or painful sensations can be linked to different problems (Hayes et al., 1996). One of the most important impacts that the avoidance of these experiences has, is that it interferes with a person's deeply held values in life (Hayes, Strosahl, & Wilson, 1999), which can be for example to protract an important task because of the discomfort it evokes. Thereby, a short-term relief of discomfort can be achieved, even though the long-term consequences can create harm (Hayes, Strosahl, & Wilson, 1999; Hayes et al., 1996). The effort of control and avoidance of unpleasant events increases the distress that is initially aimed to be reduced (Fledderus et al., 2010). It disturbs pleasant and spontaneous activities and thereby may decrease positive emotions. Moreover lack of acceptance may play a role in maintaining negative emotions and impede positive emotions, reduces positive affect and life satisfaction (Kashdan, Barrios, Forsyth, & Steger, 2006).

In contrast to that, acceptance helps to create space for someone's valued actions and behavior by preventing the struggle with unpleasant experiences from the past which cannot be changed anyway (Wilson et al., 2010). For this reason acceptance is also a coping strategy (Thompson, Arnhoff, & Glass, 2011). This implies that acceptance is an active process of experiencing feelings as physiological sensations, thinking thoughts not as prescriptive realities, and remembering memories as subjective (Blackledge & Hayes, 2001).

The less negative internal sensations are avoided, the lower are the levels of negative emotions (Kashdan et al., 2006). Acceptance increases the ratio of positive emotions in contrast to negative emotions. Therefore both, positive and negative emotions are experienced and accepted, hence acceptance gives rise to more positive emotions by promoting and creating space for them (Kashdan et al., 2006). For that reason, acceptance may predict positive emotions.

### *Psychological well-being*

Carol Ryff started research on well-being, motivated by the idea of the necessity of the philosophical question about what is meaningful in life (Ryff & Singer, 2013). Well-being combines the traditions of eudaimonic and hedonic well-being. Hedonic well-being focuses on positive feelings. In contrast, the eudaimonic tradition defines well-being in terms of

functioning fully in a social and individual context (Ryan & Deci, 2001). Aristotle states in his *Nicomachean Ethics* that the goal of life is not to feel good, but is to live virtuously instead. Eudaimonia can only be achieved by a good stable character in which the habits are voluntary and choices are conscious (Ryff & Singer, 2013).

Based on the philosophical background, Ryff found six factors that describe psychological well-being and together reflect the obstacles that individuals experience in their life while attempting to realize their potential (Ryff, 1989). The six factors are (1) self-acceptance, (2) continued growth and development as a person, (3) pursuit of meaningful goals, (4) ability to manage complex environments to suit personal needs and values, (5) sense of autonomy in thought and action, and (6) establishment of quality ties to others (Ryff & Singer, 2013). The components of psychological well-being have been associated with positive emotions. Self-acceptance and positive relations, as well as autonomy and personal growth are a part of Fredrickson's upward spiral of positive emotions and appertain to the built resources (Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008). In addition the six factors of psychological well-being contribute to happiness (Seifert, 2005).

### 1.3 Aim of this study

This study aims to examine if resilience, acceptance, and psychological well-being are predictors for positive emotions in daily life. Thereby, this study not only contributes to the research on concepts of positive psychology, it also aims to offer a better understanding of what is relevant in order to experience positive emotions.

Literature indicates that resilience, as an enduring built resource in the Broaden and Build theory (Cohn et al., 2009), acceptance, as a promoter of positive emotions (Fledderus et al., 2010), and psychological well-being as an built resource (Fredrickson et al., 2008), are a part of Fredrickson's upwards spiral of positive emotions, therefore they may be predictors of positive emotions.

Based on the preceding annotation the research question of this study is:

Do acceptance, resilience, and psychological well-being predict experiencing positive emotions in daily life? And which one is the strongest predictor?

It is hypothesized that resilience, acceptance, and psychological well-being all are predictors of positive emotions. However, an explorative subquestion is added:

Which of the three possible predictors is the strongest one?

## 2. Methods

### 2.1 Design

This study's design is a longitudinal survey study with two moments of measurement. On the first moment of measurement the predictors were assessed at baseline. The experience of positive emotions were measured in the following week for seven days four times a day. However, the positive emotions of all moments of measurement are represented in an aggregated mean, which portrays the second moment of measurement in this study.

### 2.2 Procedure

The participants received an email with an introduction letter containing general information. First of all the participants used a link to Qualtrics, an online survey tool, to fill in some questionnaires concerning their demographic data and the possible predictors resilience, acceptance, and psychological well-being.

After filling in the questionnaires, the data collection in order to gather positive emotions started by using the UT Survey app (Trompetter, Borgonjen, Zwart & van Tongeren, 2015). This smartphone application is an instrument that is based on interactive monitoring, as the participants use it for self-reports about their experienced emotions over one week (Fahrenberg et al., 2007). The participants were asked to fill in their self-report four times a day at fixed moments: at 10 am, 1 pm, 5 pm and 9 pm for one week, thus 7 days, which in total makes 28 moments of measurement. The participants had two hours to give answer to the questions. If a participant missed more than 50% of times to complete the questionnaire, the data was not analyzed. To reduce missing data and facilitate the participation, fixed points of time were chosen, rather than randomized moments of measure. Another reason to reduce missing data was the time interval of two hours to give answer to the questions.

The participants spend altogether about one hour engaging in this study, including about 20 minutes filling in the questionnaires, 1 minute giving answers on the app-questions on 28 moments of measure, and the installation of the application on their smartphone. The data delivered by Qualtrics and the data of the UT Survey app (positive emotions) were merged to the participant by his or her email address, which was replaced by a number to secure the anonymity of each participant.

### 2.3 Participants

The participants of this study were recruited via convenience sampling. The majority of participants were friends, fellow students and family members of the students. One inclusion criterion of this study was a minimum age of 18 years. Furthermore all participants had to own a smartphone and had to be able to use it in order to measure emotions in everyday life by ESM. Another inclusion criterion for the participants was to speak Dutch, as the questionnaires as well as ESM-items about emotions were in Dutch.

In total, 57 people participated in this study, however seven participants prematurely stopped the use of the app. Therefore the data of 50 people was used in the analysis. The sample consists of 22 men (44%) and 28 women (56%), in the age between 21 and 58 years. Table 1 shows the demographic data of the participants.

Table 1

*Demographical data of the participants.*

Variable		n (%)
Gender	male	22 (44%)
	female	28 (56%)
Age		33.26 (SD=13.6)
Work	Student	23 (46%)
	Working	22 (44%)
	Unemployed/ Incapable	5 (10%)

*Note:* n = number of participants, N=50

### 2.4 Material and Measurement

#### *Positive emotions*

The method used to collect these data was Experience Sampling Method (ESM), which is a method to collect data about people's behavior, emotions, well-being and actions by self-report (Fahrenberg et al., 2007). Each moment of measurement consists of six questions gathered from the modified Differential Emotion Scale (mDES; Schaefer, Nils, Sanchez & Philippot, 2010) which original contains of 16 emotions to be answered on a 7-point scale. The questions are answered on a 5-point scale from 1 (*not at all*) to 5 (*totally*). Furthermore the 6 emotions were

chosen as it was expected that they occur most frequently in daily life, and because they offer a fair balance between high and low arousal emotions. The six positive emotions are: (1) calm, (2) joyful, (3) loving, (4) interested, (5) satisfied, and (6) warm-hearted. High scores indicate frequent positive emotions. Galanakis et al. (2016) did research on the reliability of the positive-emotions-items of the mDes and found  $\alpha=.79$ . In this study the reliability is  $\alpha=.78$ .

### *Resilience*

The Brief-Resilience Scale (BRS; Smith et al., 2008) was developed to measure the total score of resilience, as well as the degree of trust that the participant has in his or her capacities, valued challenges in life and the ability to learn from experiences (Smith et al., 2008). The BRS consists of six items which are answered on a 5-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*). A high total score indicates a high level of resilience. Smith et al. (2008) found a good internal consistency for the BRS ( $\alpha=.80-.91$ ), which corresponds with the internal consistency ( $\alpha=.85$ ) found in this study.

### *Acceptance*

The Acceptance and Action Questionnaire (AAQ-II) was developed to measure acceptance and experiential avoidance. It originally consists of 10 items (Hayes et al., 2006), but was reduced to a 7-item version in 2011 in support of the psychometric qualities (Bond et al., 2011). The 7 questions are answered on a 7-point scale from 1 (*never true*) to 7 (*always true*). A high total score in this study indicates a high level of acceptance. Bond et al. (2011) found an internal consistency coefficient of  $\alpha=.84$ . In this study a Cronbach's alpha of  $\alpha=.93$  was found.

### *Psychological well-being*

The Mental Health Continuum – Short Form (MHC-SF; Keyes, 2006) is an instrument to measure positive mental health with 14 items, divided into three scales: emotional well-being containing three items, psychological well-being containing six items, and social well-being containing five items. The questions are answered on a 6-point scale ranging from 0 (*never*) to 5 (*every day*) concerning the well-being within the last month. The scoring can be done for the total scale of positive mental health, as well as per scale (Lamers et al., 2011). Lamers et al. (2011) found good internal consistency in terms of Cronbach's alpha in the subscale psychological well-being ( $\alpha=.83$ ) which is similar to the internal consistency of psychological well-being in this study ( $\alpha=.88$ ).

## 2.5 Statistical analysis

The statistical analysis is carried out by SPSS version 25. In order to avoid too many missings in the UT Survey app-data, the missing data was estimated by a multiple imputation, carried out by a regression equation several times to calculate the mean per moment of measurement. In this analysis the aggregated mean of positive emotions served as the dependent variable and the scores from the questionnaires BRS, AAQ-II, and the psychological well-being scale from the MHC-SF were independent variables.

A descriptive analysis gave insight to the degree of correlations between the aggregated mean of emotions and the predictor variables. Cohen's classification of correlation coefficients (1988) was used to interpret the results. A correlation coefficient of  $0.1 < r < 0.3$  represents a weak correlation,  $0.3 < r < 0.5$  is classified as a moderate correlation, and  $r > 0.5$  is a strong correlation.

Furthermore a single regression analysis for each independent variable was carried out in order to test the hypothesis. A multicollinearity analysis was carried out, which was important in case that one of the predictor variables can be linearly predicted from the others. This can impede valid results of the individual predictive value of each concepts within a multiple regression. For the analysis a tolerance and variance of inflation factor (ViF) of 10 was used (Field, 2009). Afterwards a multiple regression is carried out including the three possible predictors in order to answer the explorative subquestion.

### 3. Results

The aggregated mean of positive emotions correlates significantly moderate with resilience and strong with acceptance and psychological well-being. Resilience correlates significantly moderate with psychological well-being. Acceptance correlates significantly strong with each other concept.

Table 2

*Descriptives for and correlations coefficients between emotions per day acceptance, psychological well-being and resilience.*

	mean (SD)	1	2	3	4
1 Positive emotions (1-5)	3.15 (0.42)	1			
2 Resilience (1-5)	3.39 (0.77)	.49**	1		
3 Acceptance (1-7)	5.24 (1.26)	.55**	.60**	1	
4 Psychological Well-being (0-5)	3.46 (0.97)	.57**	.44**	-.52**	1

*Note: \*\*  $p < .01$ , mean of positive emotions is an aggregated mean of all moments of measurement*

#### 3.1 Main analysis

The outcome of the regression analysis showed that resilience is a significant predictor of positive emotions ( $\beta = .49$ ,  $F(1, 48) = 15.47$ ,  $p < .001$ ). Resilience explains a significant proportion of variance in positive emotions ( $R^2 = .24$ ).

Table 3

*Regression of positive emotions as dependent variable and resilience as independent variable.*

	Beta	Standard error	T	$p$
Constant		.24	9.39	<.001
Resilience	.49	.07	3.93	<.001

The outcome of the regression analysis showed that acceptance is a significant predictor of positive emotions ( $\beta = .55$ ,  $f(1, 48) = 20.88$ ,  $p < .001$ ). Acceptance explains a significant proportion of variance in positive emotions ( $R^2 = .30$ ).

Table 4

*Regression of positive emotions as dependent variable and acceptance as independent variable.*

	Beta	Standard error	T	<i>p</i>
Constant		.22	10.14	<.001
Acceptance	.55	.04	4.6	<.001

The outcome of the regression analysis showed that psychological well-being is a significant predictor of positive emotions ( $\beta = .57$ ,  $F(1, 48) = 23.12$ ,  $p < .001$ ). Psychological well-being explains a significant proportion of variance in positive emotions ( $R^2 = .33$ ).

Table 5

*Regression of emotions as dependent variable and psychological well-being as independent variable.*

	Beta	Standard error	T	<i>p</i>
Constant		.18	12.47	<.001
Psych. well-being	.57	.05	4.81	<.001

Resilience, acceptance and psychological well-being significantly explain 43% of the variance in positive emotions ( $R^2 = .42$ ,  $F(3, 46) = 11.77$ ,  $p < .001$ ). The outcomes further show that psychological well-being is the most significant predictor of positive emotions ( $\beta = .36$ ,  $t(49) = 2.71$ ,  $p \leq .01$ ).

Table 6

*Regression between the dependent variable positive emotions and the independent variables acceptance, resilience, and psychological well-being.*

	Beta	Standard error	T	<i>p</i>	Tolerance	ViF
Constant			7.80	<.001		
Resilience	.19	.17	1.31	.19	.62	1.62
Acceptance	.25	.34	1.7	.09	.56	1.8
Psych. wellbeing	.36**	.44	2.71	.01	.71	1.42

*Note: \*\*  $p \leq .01$*

## 4. Discussion

The aim of this study was to explore if resilience, acceptance, and psychological well-being are predictors of positive emotions in daily life. Based on the results of this study, the hypothesis, that all three are predictors of positive emotions, can be confirmed. It is also shown that psychological well-being is the most significant and may be the strongest predictor. The interpretation of this result and the question if psychological well-being is the strongest predictor has to be considered with precaution and will be discussed.

That psychological well-being is a predictor of positive emotions can be explained by the characteristics of the six dimensions which are related to intrinsic motivations and actions. Some of the six factors of psychological well-being are associated with intrinsic aspiration (Kasser & Ryan, 1996) and the basic needs of Ryan and Deci's Self-Determination Theory, competence, autonomy, and relatedness (Ryan & Deci, 2000). For instance, Ryff's factors *sense of autonomy, quality ties, and ability to manage complex environments to suit personal needs* are characteristics of intrinsic or self-determined behavior (Ryan, Huta, & Deci, 2013). Intrinsic motivated actions, or else the basic needs, predict happiness in terms of positive emotions (Reis, Sheldon, Gable, Roscoe, & Ryan, 2000). Therefore, psychological well-being significantly predicting positive emotions was an expected outcome of this study. However, these findings only support the effect that psychological well-being has on positive emotions. The question if it is a stronger predictor than resilience and acceptance cannot be answered yet.

There are suggestion in literature about the reason for resilience and acceptance predicting positive emotions less significantly than psychological well-being. Resilience and acceptance were possibly not as effective and predictive on positive emotions as in studies that included a negative factor. This study was not conducted in a particularly stress-related setting, nor sampled from any problem-related population. Other researcher found that resilience and positive emotions are strongly related in problematic circumstances rather than unproblematic situations, and that the unique effects that resilience has are specific for decreasing negative outcomes (Smith et al., 2008). Other researches support these assumptions by including a negative factor to their studies, as stress (Ong et al., 2006), pain (Ong, Zautra, & Reid, 2010) or the aftermath of crises (Fredrickson et al., 2003). This may also apply to acceptance, as it is correlating with profitable responses to conditions of high stress (Plumb, Orsillo, & Luterek, 2004; Tull et al., 2004). Acceptance may be less beneficial in periods of low stress and when confronted with fewer negative experiences (Shallcross, Troy, Boland, & Mauss, 2010). This could mean that negative emotions and stress resulting from negative circumstances may have

a moderating role in the effect that resilience and acceptance have on positive emotions. The effect of resilience and acceptance on positive emotions may be stronger in stress-related circumstances. In contrast to that, psychological well-being is not more effective in predicting positive emotions in stress-related circumstances. That means that the results could be different in a stress- or problem-related sample. This could serve as one explanation for the results of this study.

Another explanations can be the relation that resilience and acceptance have with psychological well-being. Psychological well-being is a broad concept that not only consists of six dimensions but also extends over several aspects in life in which the dimensions play a role. However, also resilience and acceptance may play a role in the dimensions of psychological well-being and the circumstances in life that the dimensions concern. Literature indicates that resilience and acceptance are relevant contributors of psychological well-being. It is shown that resilience is effective in improving psychological well-being (Fredrickson, 2001; Noone & Hastings, 2009). This corresponds with a study showing that resilience could be predictor of psychological well-being, with optimism in a mediating role (Souri & Hasanirad, 2011). Optimism is a part of resilience and a psychological resource that is built in the upwards spiral of positive emotions (Fredrickson et al., 2003). This means that resilience may be a relevant contributor for psychological well-being. This may also apply to acceptance. It correlates with increased psychological and emotional well-being, as well as with increased autonomy, self-acceptance, personal growth, positive relations and environmental understanding (Fledderus, Bohlmeijer, & Pieterse, 2010), which are all important aspects of psychological well-being. Acceptance is also represented in the dimension Self-acceptance of psychological well-being (Dodge, Daly, Huyton, & Sanders, 2010). The relevance of acceptance for well-being is underlined by its role in Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999). ACT consisting of six core processes of which acceptance is one. ACT increases well-being by clarifying values and creating psychological flexibility (Kashdan & Ciarrochi, 2013; Wilson, Sandoz, Kitchens, & Roberts, 2010). The relevance of acceptance for psychological well-being is underlined by researchers that found that the absence of acceptance is associated with decreased psychological functioning in reaction to stressors (Kashdan, Barrios, Forsyth, & Steger, 2006), which means that acceptance has a crucial role for psychological well-being in stressful times. Therefore acceptance promotes psychological well-being and is even a relevant aspect of it, as well as resilience. High levels of them increase and may partly explain the degree of psychological well-being.

Based on the results and discussion of this study it can be concluded that psychological well-being may be a stronger predictor for positive emotions than resilience and acceptance, however, the relevant roles that these two predictors play in increasing and promoting psychological well-being underlines that they may be equally relevant in predicting positive emotions.

#### 4.1 Limitations and suggestions

The results of this research have to be considered with precaution since it contains some limitations. The first limitation of this study is about the methods of measurement. The items of positive emotions were assessed with Experience Sample Method, which offers several benefits, e.g., insight in the fluctuation of positive emotions. It is expected that the predictors of a fluctuating outcome are fluctuating as well. However, the predictors were not assessed via ESM, instead they were measured with a questionnaire at one moment of measurement. Therefore it was not advisable to use the benefits of ESM, and as a consequence an aggregated mean of the positive emotions was calculated. One suggestion for research on fluctuating concepts is that once ESM is used to assess variables, it should be used to assess all variables that may represent fluctuating concepts in the study.

It is worth to be noted that there are possible limitations on the conceptualization of resilience. There are critiques that the BRS aims to assess only the ability to bounce back from stress, which is but one characteristic of resilience (Windle, Bennett, & Noyes, 2011). Other characteristics that may have not been taken into account are effects of stress, sensitivity, spiritual beliefs, tolerance, protective resources from family and community, and more. The researchers further point out that the BRS is only an effective outcome measure in the context of stress (Windle, Bennett, & Noyes, 2011). In order to measure a broader concept of resilience that includes more characteristics than to bounce back from stress, the Connor-Davidson Resilience Scale (CD-RISC, Conner & Davidson, 2003) could be recommended.

Other implications for future research in resilience and acceptance could be to explore the effect on positive emotions moderated by problematic circumstances in life that cause suffering or stress. (Smith et al., 2008; Windle, Bennett, & Noyes, 2011). In order to do that, this research should be carried out with a stress-related sample. This could support the assumptions and possible explanations about the results in this study. Other implications for future research concern the relation between the predictors of positive emotions. It is interesting to further explore the role of resilience and acceptance in psychological well-being. In addition,

more research on the predictors of positive emotions could offer a broader insight in if there is one strongest predictors.

The results of this study contribute to insights in the relations between positive psychology-concepts and hopefully nourishes the trend in scientific research to enhance well-being and mental health.

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