The way of making choices: Maximizing and satisficing and its relationship to well-being, personality, and self-rumination

Lenka Vargová*

Ľubica Zibrínová[†]

Gabriel Baník‡

Abstract

There is a lively debate about the effect of maximizing and satisficing tendencies on well-being. The question is, whether maximizing and satisficing have an adaptive or maladaptive effect on well-being. There are also issues regarding the conceptualization and measurement of maximizing and satisficing tendencies. In a sample of 514 subjects from the general population in Slovakia, a two-component model of maximizing was examined. Satisficing tendency was measured as a separate construct. The results show the usefulness of a two-component model (maximizing as a strategy and maximizing as a goal) in measuring maximizing tendency. Maximizing as a strategy (measured as alternative search) turned out to be maladaptive (positively related to depression and negatively related to happiness), whereas maximizing as a goal (measured as high standards) had no maladaptive effect (no relation with well-being). In addition, the two components were differently associated with personality factors, which strengthens the need to distinguish between them. However, the satisficing tendency measured separately from maximizing tendency was not related to anything which raises a question about the conceptualization and validity of this tendency. The results of the current study, therefore, indicate that the (mal)adaptive effect of these tendencies depends on their conceptualization as well as on how these tendencies are measured, and also on their different relationship with personality factors. However, results also point to the importance of considering the cultural context that may have an effect on the relationship between maximizing and well-being. Therefore, the results may vary due to different cultures.

Keywords: two-component model of maximizing, satisficing, depression, happiness, personality traits, self-rumination

1 Introduction: Maximizing and satisficing

In the last two decades, much attention has been paid to the adaptive nature of maximizing and satisficing tendencies. Schwartz et al. (2002) distinguish between "maximizing" and "satisficing". Maximizing tendency is the effort to select the best option, and satisficing tendency is the willingness to settle for a sufficient or "fairly good" option. Despite maximizers being able to objectively make better decisions than satisficers, satisficers feel subjectively better (Álvarez, Rey & Sanchis, 2014). Maximizers are not able to experience happiness, compared to satisficers. Apparently, the tendency to find the best options can be maladaptive. It can contribute to a lower experience of happiness, subjective well-being and a higher incidence of depressive symptoms (Schwartz et al.,

The original theory suggests that the maximizing tendency is maladaptive while the satisficing tendency is adaptive (Schwartz et al., 2002); maximizers are apparently less happy (or more depressed) than satisficers. However, others have sugested that Schwartz et al. (2002) did not provide an exact definition of these constructs and that maximizers could be as happy as satisficers with a different definition of maximizing (Diab et al., 2008; Dalal et al., 2015). In the theories of maximizing (vs. satisficing), several issues are still unclear: a) the anchoring of the theory and conceptual model as well as measurement; b) the relationship between maximizing/satisficing and well-being (e.g., happiness and depression); c) the relationships between satisficing, maximizing and other variables that important to both well-being and decision making.

^{2002).} Maximizers are portrayed as unhappy and exhausted from the constant search for the best option (Diab, Gillespie & Highhouse, 2008). Yet, there also seems to be a way of measuring the maximizing tendency that may not show maximizers as being less happy or depressed. Rather, maximizers could be more motivated and subjectively much more satisfied because of the high goals they are able to achieve through this tendency (Bubić & Erceg, 2018). Maximizers can experience more success due to the higher maximizing tendency (Dalal et al., 2015) and success can in turn make them happier (Lyubomirsky, King & Diener, 2005).

This work was funded by Slovak Research and Development Agency [APVV-17-0418].

Copyright: © 2020. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.

^{*}Institute of Psychology, Faculty of Arts, Presov, Slovakia. ORCID: 0000-0002-8758-0997.

[†]Institute of Psychology, Faculty of Arts, Presov, Slovakia, and Center of Clinical Psychology Care, Presov, Slovakia. ORCID: 0000-0002-7336-7343.

 $^{^{\}ddagger}$ Corresponding author. Institute of Psychology, Faculty of Arts, Presov, Slovakia. ORCID: 0000-0002-6601-3619. Email: gabriel.banik@gmail.com.

1.1 Conceptual model and measuring of maximizing and satisficing

There is no consensus regarding how satisficing and maximizing should be conceptualized and measured. As a result, there are some other issues that need to be addressed:

- It has been suggested that maximizing and satisficing tendencies constitute a continuum. By this view, these tendencies are measured through one tool where a high score indicates maximizing and a low score indicates satisficing (Schwartz et al., 2002; Nenkov et al., 2008; Diab et al., 2008; Lai, 2010; Weinhardt et al., 2012; Richardson et al., 2014; Dalal et al., 2015). However, others have suggested that maximizing and satisficing tendencies are two separate variables. Therefore, they should be measured by two different measures or subscales.
- There is also disagreement about how the maximizing tendency should be operationalized. It has been suggested that maximizing consists of high standards, alternative searches and decision difficulties (Schwartz et al., 2002; Nenkov et al., 2008). While some researchers exclude decision difficulties (Diab et al., 2008; Lai, 2010), others think that high standards should not be part of maximizing (Turner et al., 2012; Ďuriník, Procházka & Cígler, 2018). Richardson et al. (2014) have added regret as part of maximizing. Dalal et al. (2015) exclude alternative searches and decision difficulties because they suggest it is an outcome of maximizing rather than being part of it.

Thus, the way of measuring maximizing and satisficing can be crucial. There could be a difference when these tendencies are measured as a continuum, through one measure that consists of high standards, alternative searches and decision difficulties, or when one or two of these parts are excluded, or when these parts are measured separately.

These problems explain the mismatch between the claims as to whether the maximizing tendency is maladaptive or not. In this regard, Cheek and Schwartz (2016) have suggested that maximizing should be viewed as a two-component model consisting of maximizing as a goal and maximizing as a strategy. They go on to say that maximizing as a goal is characterized as high standards and is not maladaptive while maximizing as a strategy is characterized as an alternative search and is maladaptive. This is because maximizing as a goal is characterized as the effort to apply high standards. However, maximizing as a strategy is characterized as an exhausting effort to compare the huge amount of possibilities during decision-making. Cheek and Schwartz (2016) have also suggested that, if researchers want to measure satisficing separately, they should use less ambitious satisficing subscale from DMTI (Decision Making Tendency Inventory; Misuraca et al., 2015) because its items best represent a satisficing tendency. The current study tries to address these inconsistencies by measuring the satisficing and maximizing separately and measuring maximizing as a strategy and as a goal.

1.2 Maximizing and satisficing and its relationship to well-being

According to several studies (e.g., Schwartz et al., 2002; Nenkov et al., 2008; Diab et al., 2008; Lai, 2010; Rim et al., 2011; Turner et al., 2012; Weinhardt et al., 2012; Mikkelson & Pauley, 2013; Richardson et al., 2014; Misuraca et al., 2015; Dalal et al., 2015; Cheek & Schwartz, 2016; Rim, 2017; Ďuriník et al., 2018), the relationship between satisficing and maximizing and well-being is not clear. Some authors (Schwartz et al., 2002; Rim et al., 2011; Turner et al., 2012; Rim, 2017; Ďuriník et al., 2018) suggest that maximizing is maladaptive while other authors (Nenkov et al., 2008; Diab et al., 2008; Lai, 2010; Dalal et al., 2015) have found that maximizing is not maladaptive. As described above, the way of measuring these tendencies appears to be crucial. Hughes and Scholer (2017) also stressed that, for evaluating the maladaptive or adaptive effect of maximizing, it is necessary to distinguish between maximizing as a goal and maximizing as a strategy. The way of measuring (in terms of the chosen measurement) may have contributed to the fact that the maximizing tendency is related differently to the same variables across several studies. Differing measurements could also lead to inconsistent conclusions about whether the tendency to maximize is maladaptive or not.

Apart from obvious contradictions in results due to various ways of measurement and conceptualization, there is also evidence about cultural differences in relationships between maximizing and well-being (Cheek & Schwartz, 2016). Specifically, maximizing tendency is expected to be more maladaptive in societies for which abundance of personal choice is highly valued and for which it is considered as the way to happiness (Roets, Schwartz & Guan, 2012). In addition, these tendencies can be differently associated with well-being across culture and when different types of measures are used (Oishi et al., 2014).

1.3 The present study

The current study aimed to adopt a two-component model of maximizing in an effort to provide insight into contradictory findings about (mal)adaptive effect of maximizing tendency. We also examined the nature of satisficing tendency if measured separately from maximizing tendency. In addition, we also asked how these tendencies are related to personality (specifically neuroticism and extraversion) and self-rumination. These variables were measured in this study because all of them seem to play a role in decision-making

(Byrne, Silasi-Mansat & Worthy, 2015; Lauriola & Levin, 2001; Dewberry, Juanchich & Narendran, 2013; van Randenborgh, de Jong-Meyer & Hüffmeier, 2009), while neuroticism and extraversion were analyzed in previous studies focused on maximizing as well as satisficing (e.g., Weinhardt et al., 2012; Dalal et al., 2015; Misuraca et al., 2015; Purvis, Howell & Iyer, 2011; Miceli et al., 2018).

For the purposes of the present study, we defined the focal concepts as follows. *Self-rumination* is characterized by the inability to get rid of thoughts related to a person's decisions (Williams et al., 2011; Palomäki, Laakasuo & Salmela, 2013). Maximizers have been characterized by having a greater inability to get rid of thinking about decisions and options. Self-rumination could make the process of thinking about decisions and options more intense, leading to negative affect. *Neuroticism* is a personality trait characterized by anxious feelings, fear or depressed mood negatively affecting the decision-making process (Jalajas & Pullaro, 2018). *Extraversion* is characterized by talkativeness, enthusiasm or conviviality and has a positive effect in the context of decision-making (Purvis et al., 2011).

We hypothesize that satisficing tendency would be an adaptive decision-making tendency, implying that satisficing will positively correlated with happiness and negatively correlated with depression. In the context of two components, we hypothesize that maximizing as a strategy would be more maladaptive than maximizing as a goal. In addition, we hypothesize that maximizing measured as a two-component model would be related to personality and self-rumination in a different way. In addition, the current study may shed light on the generalizability of findings about maximizing (as a two-component model) and satisficing tendencies in a new cultural context, where it had not yet been examined, in East European countries.

2 Method

2.0.1 Subjects

The sample was made up of 514 subjects from the general population in Slovakia (110 men and 397 women, two subjects do not state their gender) aged between 14 and 62 (M = 27; SD = 9.88). The data collection was carried out face-to-face (n = 90) as well as online (n = 424). Most of the subjects were in a relationship (n = 221), single (n = 182), married (n = 90), divorced (14). Education: high school (n = 241), university (n = 250), primary school (n = 12). The face-to-face data collection took place among employees at the unemployment office and among employees at high school. The online data collection was done through popular social network groups on Facebook (3 social groups were addressed, 2 with about 100,000 members and one with about 15,000 members). The members of these social network groups are mainly undergraduates. The a priori sample size was not

computed but the effectiveness of the used sample size was checked by a sensitivity analysis (computed by G*Power calculator). Given by alpha level 0.05, power 0.8, it was found that N = 514 is enough to find the effect size r = 0.11.

2.1 Measures

The measurements of the maximizing and satisficing tendencies were chosen based on the suggestion of the authors Cheek & Schwartz (2016). We decide to apply their conceptual two-component model to measure maximizing tendency. We also decide to measure the satisficing tendency as a separate construct. According to Cheek & Schwartz (2016), the MTS-7 accurately reflects the concept of maximizing as a goal. Also, according to them the subscale of MI – the alternative search subscale, best represents the maximizing as a strategy. In addition, the items from the "less ambitious satisficing" subscale represent the concept of satisficing more accurately in contrast to other measures/subscales for measuring satisficing separately.

MTS-7 — 7-item Maximizing Tendency Scale (Dalal et al., 2015) was used to measure the tendency of maximizing as a goal (Cheek & Schwartz, 2016). It consists of 7 items (e.g.: "No matter what I do, I have the highest standards for myself.", or "I don't like having to settle for good enough."; McDonald's $\omega = 0.85$; $\alpha = 0.77$) focused on measuring high standards. Subjects respond to every item using a 5-point scale – from 1-strongly disagree to 5-strongly agree. Dalal et al. (2015) argue that a higher level of MTS-7 reflects higher high standards which create a maximizing tendency. A lower level of MTS-7 reflects lower high standards.

MI — **Maximization Inventory** — and its subscale — the alternative search subscale (Turner et al., 2012) was used to measure maximizing tendency as a strategy (Cheek & Schwartz, 2016). The MI consists of three subscales to measure alternative search, decision difficulty and satisficing. The alternative search subscale consists of 12 items (e.g.: "I usually continue to search for an item until it reaches my expectations.", or "I find myself going to many different stores before finding the thing I want."; $\omega = 0.89$; $\alpha = 0.86$). Subjects respond to every item on a 5-point Likert scale — from 1-strongly disagree to 5-strongly agree. A higher level in the MI-alternative search subscale reflects a higher alternative search in the decision-making process.

DMTI — **Decision Making Tendency Inventory** — consists of 6 subscales. It serves to measure maximizing (resolute maximizing; fearful maximizing), satisficing (less ambitious satisficing; more ambitious satisficing) and minimizing (parsimonious minimizing; indolent minimizing) tendencies. In the present study the less ambitious satisficing

subscale (Misuraca et al., 2015) was used to measure the satisficing tendency (Cheek & Schwartz, 2016). It consists of 4 items (e.g.: "If I am happy with my work, I do not seek better opportunities.", or "When I watch TV or listen to the radio, I tend to follow the first program that I find interesting."; ω = 0.61; α = 0.57). Subjects respond to every item using a 5-point scale from 1-strongly disagree to 5-strongly agree. A higher score reflects higher less ambitious satisficing.

BFI44 — **Big Five Inventory-44** (John & Srivastava, 1999) — consists of 5 subscales to measure a personality. We used two. They showed good psychometric properties in a population similar to our sample in Czechia (Hřebíčková et al., 2016). The subscales extraversion (e.g.: "...is outgoing, sociable"; $\omega = 0.91$; $\alpha = 0.86$) and neuroticism (e.g.: "...gets nervous easily"; $\omega = 0.89$; $\alpha = 0.87$) were used to measure personality traits. Both subscales consist of 8 items. Subjects respond to every item on a 5-point Likert scale – from 1 (strongly disagree) to 5 (strongly agree). A higher score reflects a higher level of neuroticism, and vice versa. Scoring is the same in extraversion.

SHS — Subjective Happiness Scale (Lyubomirsky & Lepper, 1999) was used to measure happiness. It consists of 4 items (e.g.: "In general, I consider myself: from 1- not a very happy person to 7-a very happy person", or "Compared to most of my peers, I consider myself: from 1-less happy to 7-more happy"; $\omega = 0.87$; $\alpha = 0.84$) which measure subjective happiness. Subjects respond to every item on a 7-point Likert scale. A higher score reflects a higher level of happiness.

BDI-II — Beck Depression Inventory (Beck, Steer & Brown, 1996) measures the presence and severity of depressive symptoms. It consists of 21 items ($\omega = 0.93$; $\alpha = 0.92$) characterized by 4-5 assertions and 4 grades that evaluate the problem. Every item can have a score from 0 to 3 by choosing one of the statements. One example of the item to measure the intensity of crying as a symptom is: 0 ("I don't cry any more than usual."), 1 ("I cry more now than I used to."), 2 ("I cry all the time now.") or 3 ("I used to be able to cry, but now I can't cry even though I want to."). An example of items to measure feelings of failure is: 0 ("I do not feel like a failure."), 1 ("I feel I have failed more than the average person."), 2 ("As I look back on my life, all I can see is a lot of failures.") or 3 ("I feel I am a complete failure as a person."). A higher score reflects a higher level of depression.

RRQ — Rumination-Reflection Questionnaire (Trapnell & Campbell, 1999) measures self-reflection and self-rumination. The self-rumination scale was used in the

present study. It consists of 12 items (e.g.: "My attention is often focused on aspects of myself I wish I'd stop thinking about.", or "I always seem to be "re-hashing" in my mind recent things I've said or done."; $\omega = 0.93$; $\alpha = 0.91$). Subjects respond to every item using a 5-point Likert scale - from 1 (strongly disagree) to 5 (strongly agree). A higher score reflects a higher level of self-rumination.

2.2 Procedure

The questionnaire did not contain any forced questions. Subjects could leave out some questions or part of the data collection. The subjects confirmed their voluntary participation by filling in the socio-demographic questionnaire. At the end of the data collection, there was a short, written debriefing. Subjects were provided with contact details in case they wanted some additional information or if they felt any distress after some questions. The data was collected between January and March 2019.

2.3 Data Analysis

The data were analyzed in R (R core team, 2018). The code and data are available in the supplementary materials. Subjects with more than 80% missing values were excluded from any analysis (N = 9). After this exclusion, the missingness was about 0.4%. The missing values were imputed by using multiple imputation methods with a minimum of 5 imputations (Rubin, 1987) and at least 10 iterations per imputation (Reiter & Raghunathan, 2007), with the package MICE (van Buuren & Groothuis-Oudshoorn, 2011). Descriptive statistics and correlations were computed on every imputed dataset and pooled estimates are reported. For correlations between maximizing, satisficing and other variables we also computed Bayes factor for correlation with BayesFactor (Morey et al., 2018). In exploratory analysis (see supplementary materials), the regression models with interactions were estimated.1

3 Results

3.1 Descriptive analysis

The descriptive statistics can be seen in Table 1.

3.2 Analysis of relationship

Table 2 shows the relationships (Pearson's correlations) between maximizing, satisficing, well-being, personality and

¹Before carrying out an exploratory analysis, the linearity and collinearity of variables was inspected. The linearity of the relationship between the independent variables and the dependent variable was not verified in the model but separately using the curve estimation method. In multicollinearity, a critical value for VIF of more than 5 and a tolerance of less than 0.20 was chosen (O'Brien, 2007).

Table 1: Means, standard deviations (SD), standard error (SE) and range of analyzed variables.

Variable	Mean	SD	SE	Min	Max
1. maximizing (goal)	23.48	4.97	0.22	7	35
2. maximizing (strategy)	41.64	8.72	0.39	13	60
3. satisficing	13.47	3.05	0.14	4	20
4. extraversion	25.41	6.52	0.29	8	40
5. neuroticism	24.07	6.59	0.29	8	40
6. happiness	18.06	5.10	0.23	4	28
7. depression	11.62	10.25	0.45	0	58
8. self-rumination	40.45	9.88	0.44	15	60

self-rumination. Maximizing as a *strategy* was positively correlated with neuroticism, self-rumination, and depression, and negatively correlated with extraversion and happiness. According to a Bayes-factor estimation, there is extreme evidence that maximizing as a strategy and self-rumination are positively related, strong evidence that maximizing as a strategy and neuroticism are positively related, moderate evidence that maximizing as strategy and depression are positively related, and anecdotal evidence that maximizing as a strategy and happiness are negatively related, and anecdotal evidence that maximizing as a strategy and extraversion are not related.

Maximizing as a *goal* was positively related to extraversion and self-rumination but was not related to well-being. By Bayes-factors, there is extreme evidence that maximizing as a goal and extraversion are positively related, and moderate evidence that maximizing as a goal and self-rumination are positively related.

Identified relationships between maximizing as a strategy, maximizing as a goal and personality and well-being represent small effect size. According to confidence intervals these estimates are relatively accurate. Lastly, satisficing was not related to personality and well-being, nor to maximizing. Also, according to a Bayes-factor there is moderate evidence that satisficing is not related to any examined variables.

4 Discussion

In this study, maximizing was measured as a two-component model: as a goal and as a strategy (Cheek & Schwartz, 2016). In addition, satisficing was measured separately from maximizing (Misuraca et al., 2015; Turner et al., 2012). This study found that in the context of well-being, only maximizing as a strategy was related to well-being. Specifically, maximizing as a strategy was positively related to depression and negatively related to happiness. The other decision-making tendencies (maximizing as a goal, satisficing) and

well-being were not related. On the other hand, in the context of personality, it was found that maximizing (as a goal and also as a strategy) was related to various personality traits and self-rumination, but in different ways. Results also show that satisficing tendency in the current study was not related to anything.

Cheek and Schwartz (2016) have suggested that maximizing as a strategy (measured as an alternative search) could be maladaptive. According to the findings of the current study, this could be true. Maximizing as a strategy (Cheek & Schwartz, 2016) is characterized by search for alternatives, which, in turn, is accompanied by a constant comparison of options (Schwartz et al., 2002; Turner et al., 2012), a process that could be stressful. The current study found that maximizing as a strategy was positively related to neuroticism and depression and negatively related to happiness. Thus, these findings support the claims that maximizing is a maladaptive decision-making tendency which has a negative effect on well-being (Schwartz et al., 2002). However, given the results of this study, it is appropriate to pay attention to how maximizing is measured. Maximizing as a strategy was positively related to neuroticism and depression, and negatively related to happiness and extraversion. Maximizing as a goal was not significantly related to well-being and was positively related to extraversion and negatively related to neuroticism. However, the latter correlation was weak and insignificant. Maximizing as a strategy was also more strongly related to self-rumination than was maximizing as a goal. According to these results, we suggest that it is meaningful to differentiate between maximizing as a goal and maximizing as a strategy.

However, while these results support the claim that distinguishing maximization as a two-component model is useful, the results also provide an insight into the differentiation of the maximizing components in a new cultural context. Concerning maximizing tendency, several studies point to the cultural context (Oishi et al., 2014; Moyano-Diaz et al., 2013; Roets et al., 2012). Decision-making conditions vary by culture (Roets et al., 2012). Although the results of the present study show the usefulness of the two-component model as described by Cheek and Schwartz (2016). The model proposes that maximizing as a goal should be adaptive and maximizing as a strategy should be maladaptive. The results of the present study are not fully in line with some of the previous research. Turner et al. (2012) measured maximizing as decision difficulty and alternative search. In the current study, their alternative search subscale was used to measure maximizing as a strategy and, while in their study (employing a U.S. sample) a small positive correlation between alternative search and happiness was found, in the current study we found a small correlation in the opposite direction. Moreover, Dalal et al. (2015) measured maximizing (in a Caucasian sample) using their MTS-7 measure (used to measure maximizing as a goal in this study). Their results 7. depression

8. self-rumination

Variable	1	2	3	4	5	6	7	8
1. maximizing (goal)	.77	6.65e6	0.20	8.32e2	0.31	0.13	0.18	4.52
2. maximizing (strategy)	.26***	.87	0.11	0.77	10.67	1.50	7.53	6.9e4
	[.18,.34]							
3. satisficing	05	02	.51	0.11	0.12	0.24	0.15	0.11
	[14,.03]	[10,.07]						
4. extraversion	.19***	09^{*}	.01	.87	NA	NA	NA	NA
	[.10,.27]	[17,002]	[07,.10]					
5. neuroticism	07	.13**	02	50***	.86	NA	NA	NA
	[15,.02]	[.05,.22]	[11,.06]	[56,44]				
6. happiness	.03	10*	.06	.52***	53***	.82	NA	NA
	[06,.12]	[19,02]	[03,.14]	[.45,.58]	[59,47]			

Table 2: Correlations with confidence intervals and reliability.

Note. The values in square brackets indicate the 95% confidence interval for each correlation. * indicates p < .05. ** indicates p < .01. *** p < .001. In the diagonal are values for reliability – Guttman's Lambda ($lambda^2$). On the right side from the diagonal are Bayes factors for correlation (BF₁₀). NA means that Bayes factor was not computed for this correlation.

[-.52, -.38]

-.40***

[-.10,.08] [-.47,-.32] [.48,.60]

-.04

[-.12,.05]

-.01

point to a positive relationship between life satisfaction and maximizing. In our study, maximizing as a goal was not related to well-being. In addition, the relationship between extraversion and maximizing (as a goal) was stronger than in their study. The results of the current study are more in line with the results by Oishi et al. (2014). In that study, the alternative search was positively correlated with neuroticism and depression in both samples (Japan and U.S. sample) but in the Japanese sample, there was a small negative correlation between happiness and alternative search. We have observed a similar effect. In this respect, Oishi et al. (2014) suggest that, while in the U.S. sample the employed measurement may contribute to different results between maximization and well-being, in Japan sample maximizing had a negative effect on well-being regardless of the scale that was used. Lastly, Ďuriník et al. (2018) found a small negative correlation between alternative search and happiness in a similar a closely related population (Czech).

.05

[-.04,.13]

.12*

[.04,.21]

.13**

[.04,.21]

.23***

[.14,.31]

The last decision-making tendency which was examined in our study was satisficing. Satisficing is characterized as a potentially adaptive decision-making strategy which leads to positive affectivity (Schwartz et al., 2002; Rim et al., 2011; Turner et al., 2012). In the current study, we found very weak and insignificant relationships among satisficing and all other variables (with other decision-making tendencies: maximizing as a goal, and maximizing as a strategy, and with well-being variables: happiness, and depression, but also with personality factors such as neuroticism, extraversion,

and with self-rumination). Based on our results, we were unable to offer evidence concerning whether satisficing is adaptive or maladaptive.

[-.67, -.57]

-.47***

[-.53, -.40] [.46, .58]

.93

NA

.92

.53***

[.47,.59]

.54***

The fact that satisficing was unrelated to anything2 is a rather surprising result. The construct measuring satisficing also showed a lower level of reliability. On the other hand, these results are in accordance with the study in which the authors developed the measurement tool which we used. The reliability is approximately the same as in the study from the authors who created this subscale. The same applies to the relationship between satisficing and well-being. In the original work (a subscale called less ambitious satisficing) it was not related to depression or life-satisfaction (Misuraca et al., 2015). Although there are three subscales measuring satisficing tendency, Cheek and Schwartz (2016) proposed a less ambitious satisficing subscale as a good variant to measure this tendency because items of this subscale better reflect this tendency. According to them, a more ambitious satisficing subscale (DMTI; Misuraca et al., 2015) reflects general perseverance rather than satisficing. In addition, some items of the satisficing subscale from the Maximization inventory (Turner et al., 2012) reflect something like "make the best of

²No item from the satisficing scale was significantly related to wellbeing, personality, or self-rumination (see supplementary materials). Three items showed a weak relationship with maximizing. These items were correlated with maximizing in different directions, which might indicate the measuring of satisficing as a two-component model (as a goal and as a strategy). One of the items was not correlated with anything.

the situation", and some items reflect the "tolerance of uncertainty" rather than satisficing tendency (Cheek & Schwartz, 2016, p.132). In accordance with these recommendations, we decided to measure it with the less ambitious satisficing subscale. However, the results in the current study appear to question the extent to which satisficing is a valid construct (in the sense of, for example, its criterion validity). Satisficing, as defined, could be a relevant and useful construct, but it seems that in its current form, its conceptualization and its measurement is disputable. In other words, although it is an undeniable fact that in recent decades much attention has been paid to the controversial nature of the tendency to maximize, a future direction could be focused also on satisficing tendency and its conceptualization and measurement.

Knowing how decision-making tendencies (maximizing and satisficing) are related to neuroticism, extraversion and self-rumination could explain the different findings regarding the maladaptive and adaptive nature of these tendencies. All three variables (neuroticism, extraversion, and self-rumination) have been repeatedly and stably identified as factors that are strongly related to depression and happiness (e.g., Hakulinen et al., 2015; Van Eeden et al., 2019; Olatunji, Naragon-Gainey & Wolitzky-Taylor, 2013; Pishva et al., 2011; Sariçam, 2016; DeNeve & Cooper, 1998; Hills & Argyle, 2001). These relations were also consistent with our results. Past research shows that if neuroticism was controlled for, the tendency of maximizing did not have a negative effect on well-being (in a U.S. sample, at least). In the Japanese sample, maximizing had a negative effect on well-being even if the neuroticism was controlled for, which also suggests the lack of cultural invariance (Oishi et al., 2014; Purvis et al., 2011). The different effects of maximizing as a goal and maximizing as a strategy on well-being could thus be explained through different relationships to variables that are significant in the context of well-being.³

This study aimed to adopt the conceptual two-component model of maximizing proposed by Cheek & Schwartz (2016) and discuss the (mal)adaptive effect of maximizing and satisficing tendencies and their relationship to personality and self-rumination. The results have shown that it is not straightforward to make inferences as to whether maximizing is maladaptive or not. It depends on several factors. Firstly, our study, like some other studies (Cheek & Ward, 2019; Hughes & Scholer, 2017; Mikkelson & Ray, 2020; Cheek & Goebel, 2020), shows the usefulness of the adaptation the two-component model of maximizing to provide insight

into contradictory findings. In addition, according to our findings, maximizing as a goal and maximizing as a strategy could be related to well-being and personality in different ways.

Several limitations of the present study are worth mentioning. In future research, the use of more complex designs should be considered (e.g., longitudinal or experimental), possibly also varying the cultural context. As pointed out by Purvis et al. (2011) personality factors could also play an important role in the (mal)adaptive effect of maximizing on well-being. This effect may also vary across samples from different cultures (Oishi et al., 2014). The results in our work did not support the need to measure satisficing as a construct distinct from maximizing (conceptualized as a being discrete). Future research could focus more on the conceptual model of this tendency, on items with validity distinct from maximizing, and if it is justified to measure those constructs separately at all. Despite the above given limitations, the main contribution of the present study is the measurement of the components of maximizing/satisficing tendencies in a novel cultural context. Lastly, the results from this sample may be helpful to researchers struggling with confusion in the maximizing literature.

5 References

Álvarez, F., Rey, J.-M., & Sanchis, R. G. (2014). Choice overload, satisficing behavior, and price distribution in a time allocation model. *Abstract and Applied Analysis*, 2014, 1–9.

Beck, A. T., Steer, R. A., & Brown, G. (1996). *Beck Depression Inventory–II*. Psychodiagnostika, a. s., Bratislava.

Bubić, A., & Erceg, N. (2018). The role of decision making styles in explaining happiness. *Journal of Happiness Studies*, 19(1), 213–229.

Byrne, K. A., Silasi-Mansat, C. D., & Worthy, D. A. (2015). Who chokes under pressure? The Big Five personality traits and decision-making under pressure. *Personality and Individual Differences*, 74, 22–28.

Cheek, N. N., & Goebel, J. (2020). What does it mean to maximize? "Decision difficulty," indecisiveness, and the jingle-jangle fallacies in the measurement of maximizing. *Judgment and Decision Making*, 15(1), 7-24.

Cheek, N., & Schwartz, B. (2016). On the meaning and measurement of maximization. *Judgment and Decision Making*, 11(2), 126-146.

Cheek, N. N., & Ward, A. (2019). When choice is a doubleedged sword: Understanding maximizers' paradoxical experiences with choice. *Personality and Individual Differences*, 143, 55–61.

Dalal, D. K., Diab, D. L., Zhu, X. S., & Hwang, T. (2015). Understanding the construct of maximizing tendency: A

³This was also found in exploratory analysis using multiple regression and moderation analysis (see supplementary materials). These exploratory results suggest that the size of the (mal)adaptive effect of these decision-making tendencies depended on the levels of these personality factors. From a practical point of view, whether any of the above-mentioned decision-making tendencies will be maladaptive or adaptive, it is important who (in terms of personality factors) chooses these tendencies. For instance, in people with higher levels of neuroticism or self-rumination, these tendencies could be more maladaptive.

- theoretical and empirical evaluation. *Journal of Behavioral Decision Making*, 28(5), 437–450.
- DeNeve, K. M., & Cooper, H. (1998). The happy personality: A meta-analysis of 137 personality traits and subjective well-being. *Psychological Bulletin*, 124(2), 197–229.
- Dewberry, C., Juanchich, M., & Narendran, S. (2013). Decision-making competence in everyday life: The roles of general cognitive styles, decision-making styles and personality. *Personality and Individual Differences*, 55(7), 783–788.
- Diab, D. L., Gillespie, M. A., & Highhouse, S. (2008). Are maximizers really unhappy? The measurement of maximizing tendency. *Judgment and Decision Making*, *3*(5), 364–370.
- Ďuriník, M., Procházka, J., & Cígler, H. (2018). The Short Maximization Inventory. *Judgment and Decision Making*, 13(1), 123–136.
- Hakulinen, C., Elovainio, M., Pulkki-Råback, L., Virtanen, M., Kivimäki, M., & Jokela, M. (2015). Personality and depressive symptoms: individual participant meta-analysis of 10 cohort studies. *Depression and Anxiety*, 32(7), 461–470.
- Hills, P., & Argyle, M. (2001). Emotional stability as a major dimension of happiness. *Personality and Individual Differences*, *31*(8), 1357–1364.
- Hřebíčková, M., Jelínek, M., Blatný, M., Brom, C., Burešová, I., Graf, S., & Zábrodská, K. (2016). Big five inventory: Základní psychometrické charakteristiky české verze BFI-44 A BFI-10. *Československa Psychologie*, 60(6), 567–583.
- Hughes, J., & Scholer, A. A. (2017). When wanting the best goes right or wrong: Distinguishing between adaptive and maladaptive maximization. *Personality and Social Psychology Bulletin*, 43(4), 570–583.
- Jalajas, D., & Pullaro, R. (2018). The Effect of Personality on Decision Making. *Journal of Organizational Psychology*, 18(5), 66-72.
- John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. Handbook of personality: Theory and research 2, 102–138.
- Lai, L. (2010). Maximizing without difficulty: A modified maximizing scale and its correlates. *Judgment and Decision making*, *5*(3), 164–175.
- Lauriola, M., & Levin, I. P. (2001). Personality traits and risky decision-making in a controlled experimental task: an exploratory study. *Personality and Individual Differences*, 31(2), 215–226.
- Lyubomirsky, S., King, L., & Diener, E. (2005). The benefits of frequent positive affect: Does happiness lead to success? *Psychological Bulletin*, *131*(6), 803–855.
- Lyubomirsky, S., & Lepper, H. S. (1999). A measure of subjective happiness: Preliminary reliability and construct validation. *Social indicators research*, 46(2), 137–155.

- Miceli, S., de Palo, V., Monacis, L., Di Nuovo, S., & Sinatra, M. (2018). Do personality traits and self-regulatory processes affect decision-making tendencies? *Australian Journal of Psychology*, 70(3), 284–293.
- Mikkelson, A. C., & Pauley, P. M. (2013). Maximizing relationship possibilities: Relational maximization in romantic relationships. *The Journal of Social Psychology*, *153*(4), 467–485.
- Mikkelson, A. C., & Ray, C. D. (2020). Development of the Revised Relational Maximization Scale and explorations of how relational maximization relates to personal and relational outcomes. *Journal of Social and Personal Relationships*, 37(8–9), 2482–2509.
- Misuraca, R., Faraci, P., Gangemi, A., Carmeci, F. A., & Miceli, S. (2015). The Decision Making Tendency Inventory: A new measure to assess maximizing, satisficing, and minimizing. *Personality and Individual Differences*, 85, 111–116.
- Morey, R., Rouder, J. N., Jamil, T., Urbanek, S., Forner, K., & Ly, A. (2018). BayesFactor: Computation of Bayes factors for common designs. Retrieved from https://cran.r-project.org/web/packages/BayesFactor/index.html
- Moyano-Díaz, E., Cornejo, F., Carreño, M., & Muñoz, A. (2013). Bienestar subjetivo en maximizadores y satisfacedores [Subjective well-being in maximizers and satisficers]. *Terapia Psicológica*, *31*(3), 273–280.
- Nenkov, G. Y., Morrin, M., Schwartz, B., Ward, A., & Hulland, J. (2008). A short form of the Maximization Scale: Factor structure, reliability and validity studies. *Judgment and Decision making*, 3(5), 371-388.
- O'Brien, R. M. (2007). A caution regarding rules of thumb for variance inflation factors. *Quality & Quantity*, 41(5), 673–690.
- Oishi, S., Tsutsui, Y., Eggleston, C., & Galinha, I. C. (2014). Are maximizers unhappier than satisficers? A comparison between Japan and the USA. *Journal of Research in Personality*, 49, 14–20.
- Olatunji, B. O., Naragon-Gainey, K., & Wolitzky-Taylor, K. B. (2013). Specificity of rumination in anxiety and depression: A multimodal meta-analysis. *Clinical Psychology: Science and Practice*, 20(3), 225–257.
- Palomäki, J., Laakasuo, M., & Salmela, M. (2013). Don't worry, it's just poker!: Experience, self-rumination and self-reflection as determinants of decision-making in online poker. *Journal of Gambling Studies*, 29(3), 491–505.
- Pishva, N., Ghalehban, M., Moradi, A., & Hoseini, L. (2011). Personality and happiness. *Procedia - Social and Behavioral Sciences*, 30, 429–432.
- Purvis, A., Howell, R. T., & Iyer, R. (2011). Exploring the role of personality in the relationship between maximization and well-being. *Personality and Individual Differences*, 50(3), 370–375.
- R Core Team. (2018). R: A Language and Environment for Statistical Computing. R Foundation for Statistical

- Computing, Vienna.https://www.r-project.org/.
- Reiter, J. P., & Raghunathan, T. E. (2007). The multiple adaptations of multiple imputation. *Journal of the American Statistical Association*, 102(480), 1462–1471.
- Richardson, C. M. E., Ye, H. J., Ege, E., Suh, H., & Rice, K. G. (2014). Refining the measurement of maximization: Gender invariance and relation to psychological well-being. *Personality and Individual Differences*, 70, 229–234.
- Rim, H. B. (2017). Impacts of maximizing tendencies on experience-based decisions. *Psychological Reports*, 120(3), 460–474.
- Rim, H. B., Turner, B. M., Betz, N. E., & Nygren, T. E. (2011). Studies of the dimensionality, correlates, and meaning of measures of the maximizing tendency. *Judg-ment & Decision Making*, 6(6), 48–60.
- Roets, A., Schwartz, B., & Guan, Y. (2012). The tyranny of choice: A cross-cultural investigation of maximizingsatisficing effects on well-being. *Judgment and Decision Making*, 7(6), 689.
- Rubin, D. B. (Ed.). (1987). Multiple imputation for nonresponse in surveys. Wiley Series in Probability and Statistics
- Saricam, H. (2016). Examining the relationship between self-rumination and happiness: The mediating and moderating role of subjective vitality. *Universitas Psychologica*, 15(2), 383–396.
- Schwartz, B., Ward, A., Monterosso, J., Lyubomirsky, S., White, K., & Lehman, D. R. (2002). Maximizing versus satisficing: Happiness is a matter of choice. *Journal of personality and social psychology*, 83(5), 1178–1197.

- Trapnell, P. D., & Campbell, J. D. (1999). Private self-consciousness and the five-factor model of personality: Distinguishing rumination from reflection. *Journal of Personality and Social Psychology*, 76(2), 284–304.
- Turner, B. M., Rim, H. B., Betz, N. E., & Nygren, T. E. (2012). The maximization inventory. *Judgment and Decision Making*, 7(1), 48–60.
- Van Eeden, W. A., van Hemert, A. M., Carlier, I. V. E., Penninx, B. W., Spinhoven, P., & Giltay, E. J. (2019). Neuroticism and chronicity as predictors of 9-year course of individual depressive symptoms. *Journal of Affective Disorders*, 252, 484–492.
- van Buuren, S., & Groothuis-Oudshoorn, K. (2011). "mice: Multivariate imputation by chained equations in r." *Journal of Statistical Software*, 45(3), 1–67.
- Van Randenborgh, A., de Jong-Meyer, R., & Hüffmeier, J. (2009). Decision making in depression: differences in decisional conflict between healthy and depressed individuals. *Clinical Psychology & Psychotherapy*, 17(4), 285–298.
- Weinhardt, J. M., Morse, B. J., Chimeli, J., & Fisher, J. (2012). An item response theory and factor analytic examination of two prominent maximizing tendency scales. *Judgment & Decision Making*, 7, 644–658.
- Williams, A. D., Grisham, J. R., Erskine, A., & Cassedy, E. (2011). Deficits in emotion regulation associated with pathological gambling. *British Journal of Clinical Psychology*, 51(2), 223–238.