Title

Psychometric Evaluation of the Swedish Multidimensional Psychological Flexibility Inventory (MPFI)

Authors

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Abstract

Psychiatric disorders are common, and reliable measures are crucial for research and clinical practice. A cross-diagnostic construct that can be used to index treatment outcomes as well as prevalence of psychological ill health is psychological flexibility. The aim of this study was to validate a Swedish version of the Multidimensional Psychological Flexibility Inventory (MPFI). The MPFI has 12 subscales, six of which measure flexibility, and six that measure inflexibility. Using confirmatory factor analysis in a community sample of 670 participants, we found that a model with 12 factors had the best fit to the data (CFI = .955). All 12 subscales showed adequate reliability (CRs = .803 - .933) and the factor structure was similar across age groups and gender. Findings suggest that the Swedish version of the MPFI is a reliable instrument that can be used to index psychological flexibility. Potential areas for improvement of the instrument are discussed.

Psychiatric disorders are common and cause great suffering globally (Kessler et al., 2012). To improve measurements of prevalence and clinical outcomes, development of precise assessments of psychological health are needed. Evaluation of psychological health is often based on symptoms related to diagnostic categories. However, the predominant view of psychiatric disorders as discrete categories is debated in the clinical literature (e.g., Clark et al., 2017; Hayes et al., 1996), partly due to high comorbidity rates (Lilienfeld & Treadway, 2016; Newman et al., 1998). Furthermore, distinct diagnostic categories show symptom overlap, familial co-aggregation, and share genetic risk factors (Doherty & Owen, 2014). In addition, similar treatment methods are efficient for different disorders, and transdiagnostic psychological approaches seem as effective as disorder-specific approaches (e.g., Dalgleish et al., 2020). Thus, in line with a dimensional and hierarchical approach to the nosology of mental health and pathology, attempts are being made to identify markers (e.g., Lang et al., 2016) and higher order factors that can explain cross-disorder psychopathological processes (Caspi et al., 2014). This view has partly been adopted in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013), in which dimensionality has been added to many diagnoses. Further and more extensive developments exist through projects such as the National Institute of Mental Health's *Research Domain Criteria*, (RDoC; Clark et al., 2017; Pacheco et al., 2022) which aims to fundamentally restructure diagnostics on a multi-level causal neurobiological basis, from genomics and circuits to behavior and symptoms of pathology. Another on-going project which aims to restructure the diagnostics of mental health is the Hierarchical Taxonomy of Psychopathology (HiTOP; Conway et al., 2019), which maps symptoms and behaviors onto a hierarchical structure based on personality traits.

One promising transdiagnostic approach to psychopathological processes is the Psychological Flexibility model, which has been conceptualized as a key ingredient to mental health (Kashdan & Rottenberg, 2010). Psychological flexibility (PF) is defined as being psychologically present and accepting of all thoughts and emotions and engaging in valued behavioural patterns. It is often theoretically subdivided into the six core processes described in Acceptance and Commitment therapy (ACT; Hayes et al., 2011). ACT (said as a word; Hayes et al., 2011b) is an evidence based behavioural therapy model that has widespread application for a wide range of mental health (A-Tjak et al., 2015;

Ducasse & Fond, 2015) and behaviour change challenges (for a book-length review, see Hooper & Larsson, 2015). ACT is part of the contextual behaviour sciences, and its perspective on thinking derives from Relational Frame Theory (RFT; Hayes et al., 2001). RFT is a basic behavioural account that puts forward its analysis of relational framing as the underlying process of human language and cognition. For example, if we learn that A is related to B, we will automatically derive that B is related to A, if the relation is sameness. Also, if $A = B$ and $B = C$, we can derive the relation of $A = C$ and $C = A$ without any additional training. Relational framing can be applied to words, symbols, images, sounds, sensations, emotions or anything a person can experience, and for example, trying to inhibit a memory (or a thought) could therefore act as a reminder of the thing you do not want to remember (or think about). This informs the approach to problematic thoughts in ACT, which entails changing the perspective of the thought rather than changing, or getting rid of, the thought itself. This process in ACT is called *Defusion*, to see thinking as a process and not thoughts as facts. A part from Defusion, there are five other processes that are most often associated with ACT and these are *Acceptance*, *Values*, *Committed Action*, *Contact with the Present Moment*, and *Self-as-Context*. Acceptance refers to allowing emotions and sensations to exist. Defusion and Acceptance are mostly used in ACT to remove barriers to purposeful living made up of thoughts and emotions. Values and Committed Action are two parts of purposeful living that clarify and help co-create values that are broad, long-term sources of reinforcement for the committed actions that are values distilled into action. Contact with the Present Moment is useful for the purpose of noticing when barriers arise and for choosing valued behavior. Lastly, Self-as-Context refers to perspective taking frames relating to the ability to observe and describe from different points of view. For example, one important ability is to recognise that one are both the source and recipient of thoughts and feelings, but also the ability to discriminate between them, which allows for a broader perspective on the self and the situation. Thus, Self-as-context refers to variations in our ability to flexibly shift perspective as needed by the situation, which may be of particular importance when experiencing problems in life. All together, these six processes are said to create the higher-level process of Psychological Flexibility (PF; Hayes et al., 2011).

The most widely used self-report measure of PF is the Acceptance and Action Questionnaire (AAQ; Hayes et al., 2004) along with the revised second version (AAQ-II; Bond et al., 2011), which

has been adapted to different populations including social anxiety, substance abuse, and chronic pain patients (Luoma et al., 2011; MacKenzie, & Kocovski, 2010; McCracken et al., 2004; Reneman et al., 2014). Thus, the AAQ has served as a useful self-assessment tool in laboratory experiments, clinical trials and cross-sectional surveys (Branstetter-Rost et al., 2009; Levin et al., 2013; Twohig et al., 2018). However, although initial evaluations of the AAQ showed that it has sound psychometric properties (Bond et al., 2011; Fledderus et al., 2012), recent investigations have raised concerns with respect to item functioning and discriminant validity (Ong et al., 2020; Tyndall et al., 2019). Although there are several other measures available that focus on ACT processes, including the Brief Experiential Avoidance Questionnaire (Gaméz et al., 2014), Avoidance and Fusion Questionnaire for Youth (Greco, Lambert, & Baer, 2008), Valued Living Questionnaire (e.g., Wilson et al., 2011), and the more general Comprehensive assessment of ACT processes (Francis et al., 2016), the single most comprehensive measure to date is the 60-item Multidimensional Psychological Flexibility Inventory (MPFI; Rolffs et al., 2018). The MPFI represents an underlying 12-factor structure that maps onto the six core ACT processes of change, treating them as six distinct dimensions of PF and six dimensions of Psychological Inflexibility (PI) that can vary independently of one another. Thus, 12 key processes can be assessed as separate subscales, presenting unique opportunities for estimating detailed models of PF and PI. The instrument was developed from an initial pool of 494 items from 22 existing scales, with the addition of 74 items by the original authors. The psychometric evaluation of the final 60-item version showed strong support for a model with 12 factors loading onto 2 higher order factors (flexibility and inflexibility), with good reliability and concurrent validity (Rolffs et al., 2018). The MPFI has been translated into several languages including Mandarin, Japanese, Italian, and French, where confirmatory factor analyses of the 60-item version and a brief 24-item version (available in English and French) have shown acceptable to excellent support for a 2-factor second order model (Grégoire et al., 2020; Landi et al., 2021; Lin et al., 2020). However, there is to date no Swedish version of the MPFI.

The purpose of the current study was to use a Swedish sample to test the fit of the 12-factor structure (with two PF/PI higher order factors) of a Swedish version of the MPFI. In addition, we aimed to evaluate the convergent and discriminant validity by comparing estimates of average

variance extracted and maximum shared squared variance of factors included in the model.

Furthermore, we assessed the concurrent validity of the Swedish MPFI by correlating its factors with theoretically related measures of PF/PI, psychological health, perceived quality of life and emotion regulation.

Method

Participants

Participants were recruited by social media advertisements, online posts on various forums related to Mid Sweden University, and Qualtrics' participant recruitment service. Those recruited via Qualtrics ($n = 322$) received a small monetary incentive for partaking in the study. Inclusion criteria were being at least 18 years of age and well versed in the Swedish language. The study was reviewed and approved by the Swedish Ethical Review Authority (identification number 2019-05704). The final sample comprised 670 participants. However, demographic data were only collected for 607 respondents (see Table 1 for demographic characteristics).

Procedure

The original MPFI was translated to Swedish by authors FT, FÅ, BJ, and ÖS, respectively. The different translated versions were merged by excluding identical wordings, leaving 1-3 translated statements for each item. These were then reviewed by TL, and reduced to one statement per item that was back-translated by MCL. Problematic items were translated back and forth until consensus was reached within the group. Participants accessed the survey via an anonymous online link that included measures of psychological constructs (for more details, see the Measures section below) and demographic items, which took approximately 15 minutes to complete.

Material

Measures

Multidimensional Psychological Flexibility Inventory (MPFI; Rolffs et al., 2018). The instrument comprises five items (i.e., statements) for each of the six dimensions of PF and PI, respectively, adding up to a total of 60 items. Dimensions include (PF/PI) Acceptance/Experiential

Avoidance; Contact with the Present Moment/Lack of Contact with the Present Moment; Self as Context/Content; Defusion/Fusion; Committed Action/Inaction; and Values/Lack of Contact with Values. Participants were required to rate how often they experienced each statement during the last 2 weeks, with responses given on a 6-point scale ranging from *never true* (1) to *always true* (6). The English MPFI has been shown to have sound psychometric properties including strong support for a model with 12 factors loading onto 2 higher order factors, appropriately strong correlations with the three most widely used measures of inflexibility (i.e., AAQ, AAQ-II, and AFQ-Y), and estimates of Cronbach's α for the different subscales ranging from .87-.95. In the current study, Cronbach's α for the entire scale (i.e. 60 items) was .87 (see Table 3 for estimates of internal consistency regarding each subscale of the Swedish MPFI).

Acceptance and Action Questionnaire-II (AAQ-II; Bond et al., 2011; Lundgren & Parling, 2016). The Swedish AAQ-II is a measure of PF with six items rated on a 7-point scale ranging from *never true* (1) to *always true* (7). Responses are summed up with higher total scores indicating higher levels of PI. The AAQ-II was included as a well-used self-assessment tool to be contrasted against the Swedish MPFI, where negative correlations with PF and positive correlations with the PI factor of the Swedish MPFI would support the concurrent validity of the instrument. Cronbach's α for the AAQ-II in the current study was .92.

Avoidance and Fusion Questionnaire-Y (AFQ-Y8; Greco et al., 2008; Livheim et al., 2016). The AFQ-Y was originally developed to assess PI in children and adolescents, but has been shown to perform well with adult populations (e.g., Schmalz & Murrell, 2010). The short version has eight items that assess Fusion on a 5-point scale ranging from *not at all true* (0) to *very true* (4). Higher scores indicate higher levels of overall PI. The AFQ-Y8 was included as a validity check, where moderate-to-strong negative correlations with PF and positive correlations with the PI factor of the Swedish MPFI would support the concurrent validity of the instrument. Cronbach's α for the AFQ-Y8 in the current study was .85.

Difficulties in Emotion Regulation Scale (DERS-16; Bjureberg et al., 2016; Gratz & Roemer, 2004). The DERS-16 measures overall emotion regulation difficulties on five subscales including Clarity = lack of emotional clarity; Goals = difficulties to engage in goal directed behavior;

Impulse = difficulties with impulse control; Strategies = limited access to efficient emotion regulation strategies; Nonacceptance = non-acceptance of emotional reactions. Sixteen items are scored on a 5-point scale based on how frequent a statement has been experienced, ranging from *almost never 0-10%* (1) to *almost always 91-100%* (5). Total scores can range from 16-80, where higher scores indicate difficulties in regulating emotions. Moderate negative correlations with PF and positive correlations with the PI factor would indicate concurrent validity, as both constructs claim to predict psychological well-being/distress. Cronbach's α for the DERS-16 in the current study was .96.

Satisfaction with Life Scale (SWLS; Diener et al., 1985; Hultell & Gustavsson, 2008). The SWLS includes five items that assess respondents' satisfaction with life as a whole, rated on a 7-point scale ranging from *strongly disagree* (1) to *strongly agree* (7). Moderate positive correlations with PF and negative correlations with the PI factor would be in favor of the concurrent validity of the Swedish MPFI. Cronbach's α for the SWLS in the current study was .89.

The General Health Questionnaire (GHQ-12; Gao et al., 2004; Goldberg, 1972; Lundin et al., 2016; Sconfienza, 1998). The GHQ measures general psychological well-being, focusing on anxiety and depression, social dysfunction, and loss of confidence. Originally intended to be used with six sub-scales, empirical evidence points to a three-factor structure having the best fit for the 12-item version, however usage of these factors separately does not seem to contribute any significant information over unidimensional usage (Gao et al., 2004). Twelve items are rated on a 4-point scale ranging from *never* (1) to *always* (4), where high scores indicate low psychological well-being. Moderate negative correlations with PF and positive correlations with the PI factor would support the concurrent validity of the Swedish MPFI. Cronbach's α for the GHQ-12 in the current study was .70.

Data analyses

Using confirmatory factor analysis (CFA), we initially tested a first-order factor model with 12 correlated first-order factors. Then, we tested if the structure could be represented by two correlated second-order factors, with (1) the Acceptance, Present Moment Awareness, Self as Context, Defusion, Values, and Committed Action factors loading on a second-order Flexibility factor, and (2) Experiential Avoidance, Lack of Contact with the Present Moment, Self as Content, Fusion, Lack Contact with Values, and Inaction factors loading on a second-order Inflexibility factor. We also tested

if the structure could be represented by a single second-order factor, with all of the 12 factors loading on a second-order Psychological Flexibility factor.

Due to some minor departure from normality of the data, maximum likelihood estimation with robust standard errors with Satorra-Bentler scaled test statistics (Satorra & Bentler, 2001) were used. Model fit was evaluated using chi square statistics (χ^2), Comparative Fit Index (CFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). With respect to the CFI and TLI, values above .95 indicate a good fit, and values above .90 suggest an adequate fit. SRMR values around .08 or lower indicate a good fit to the data. For the RMSEA, values below .06 are considered a good fit, while values below .08 suggest an adequate fit (Hu & Bentler, 1999). In addition, the Akaike's Information Criterion (AIC) and Bayes Information Criterion (BIC) indices (the smallest AIC and BIC values indicating the best fitting model) were used to identify the best fitting solution.

For the model with the best fit, measurement invariance tests were conducted across age groups (younger/equal to 40 years; older than 40 years) and gender. A sequential strategy was used to test the invariance at different levels. In order to establish equivalence in factor structure across the two groups (configural) model, all parameters were freely estimated across groups. Second, a metric model was fitted, in which the factor loadings were constrained to be equal and the fit of this model was compared to the configural model. Third, a scalar model was fitted, in which factor loadings and item intercepts were constrained to be equal, which was compared to the second (metric) model. Fourth, a strict model was fitted, in which factor loadings, intercepts, and residual variances were constrained to be equal. This final model was compared to the third (scalar) model. We report Satorra-Bentler scaled difference chi square test statistic in comparing competing nested models (Satorra & Bentler, 2010). Even though a scaled chi-square difference test for nested models can be used to index invariance between models, it suffers from the same dependency on sample size as the minimum fit function statistic, and, thus, changes in model fit according to CFI, RMSEA and SRMR were used. According to the criteria suggested by Chen (2007), a decrease in CFI of $\geq .01$ in addition to an increase in RMSEA of $\geq .015$ and SRMR $\geq .030$ corresponds to an adequate criterion indicating a decrement in fit between models for sample sizes >300 .

Finally, for the model with the best fit, composite reliability (CR) was calculated as a measure of internal consistency of the factors (values greater than .70 are indicative of good reliability). Two measures of validity were calculated: (1) Discriminant validity is achieved when average variance extracted (AVE) is greater than maximum shared squared variance (MSV), and for (2) convergent validity, AVE should be equal or greater than .50 and lower than CR (i.e., variance explained by the construct should be greater than measurement error and greater than cross-loadings).

The CFAs were carried out using the R (R Core Team, 2018) package lavaan (Rosseel, 2012). All other statistical analyses were performed using JASP version 0.16 (JASP Team, 2021).

Results

Confirmatory Factor Analyses

CFAs were performed with one- or two second order factors in a hierarchical model, and a 12-factor model. Table 2 shows the model-fit indices for the models. While the fit for the one-factor higher order model was adequate (apart from the SRMR), the fit of the two-factor higher order model was good according to the RMSEA ($< .06$) and SRMR ($< .08$), and the CFI and TLI showed acceptable model fit. Fit indices for the 12-factor model were further improved, with the CFI and the TLI now having close model fit. AIC and BIC were smallest for the 12-factor model which also indicates that this model has the best fit. Factor loadings of the 12-factor model are shown in Table 3.

Measurement invariance tests were conducted to test invariance across two age groups (≤ 40 years vs. > 40 years) regarding the 12-factor model. Analyses (see Table 4 for estimates) showed support for configural invariance (suggesting a similar factor structure across the two age groups). There was no substantial decrease of model fit in the metric model, indicating that full metric invariance was achieved (i.e., the strength of the relationship between the items and constructs is equivalent across groups) or for the scalar invariance model (i.e., the item intercepts are equivalent across groups). However, with respect to residual invariance, the invariance exceeded the criteria for invariance based on change in CFI, but not the change in RMSEA and SRMR. Inspection of the

residuals indicated that releasing the constraints for the residuals that had the highest variability across groups would only marginally improve the CFI. In addition, there were little difference between the variability of the residuals for the items and therefore, no attempts to remove equality constraint were made. With respect to invariance for the genders, the results showed that the configural, metric, scalar and residual models also passed the criteria for invariance (see Table 4 for estimates).

Validity

Regarding the reliability and the factorial validity (i.e., convergent and discriminant) of the final model, Table 5 shows that CR indices indicated good reliability for all the factors (all above .80). Apart for the Acceptance factor ($AVE = .457$), all indices indicated good convergent validity ($AVE > .50$). However, indices of discriminant validity still point to some validity concerns for the Values and the Committed Action factors as estimates of AVE are lower than MSV, which indicates non-independence between these two factors in the model (see Table 5).

The AAQ-II, AFQ-Y8, DERS-16, GHQ-12, SWLS all showed moderate-to-strong correlations, in the expected directions, with the Flexibility and Inflexibility factors of the Swedish MPFI. However, some correlations with the independent factors of the 12-factor model were low, notably the correlations to the Acceptance and Experiential Avoidance subscales (see Table 6).

Discussion

The psychometric evaluation of the Swedish MPFI showed strongest support for the proposed 12-factor structure, followed by an adequate fit for a 2-factor higher order model. Furthermore, the 12-factor solution was equivalent across age groups and gender, as indicated by measurement invariance tests. Overall, the results suggest satisfactory construct- and concurrent validity, as well as good reliability for the Swedish MPFI.

Support for the 2-factor hierarchical structure of the MPFI in the current study was slightly higher than the Italian validation (Landi et al., 2021) and comparable to the French validation study (Gregoire et al., 2020), but slightly lower than estimates reported in the English validation (Rolffs et al., 2018). One potential explanation to the small decrement in model fit for the 2-factor higher order

solution in the current evaluation is that minimum sample size requirements increase as a function of model size/complexity. In fact, several concerns regarding CFA, including bias in parameter estimates, standard errors, and model chi-square statistic, have previously been tied to an inadequate sample size (Herzog et al., 2007; Jackson et al., 2013). Hence, it is possible that a larger sample size than in the current study is needed in order for the measurement model to reproduce the observed covariance matrix with minimal residual variance, and thus improve the fit of the 2-factor higher order solution.

The factors in the final model showed evidence of good composite reliability and good convergent validity. However, there was some concerns with respect to the Acceptance factor, as the AVE failed to reach the acceptable level of .50. Inspection of the remaining loadings indicated that simply one modification (by removing the item “I was receptive to observing unpleasant thoughts and feelings without interfering with them.”) was sufficient to improve the AVE to an acceptable level (analysis not reported).

Regarding discriminant validity, indices indicated dependence between the Values and the Committed Action factors in the final model, which raises some concern from a psychometric point of view but is not surprising when considering the underlying processes that govern these two factors. In brief, Committed Action refers to acting in ways that are behaviorally in line with what the individual considers to be important (that is, their values) despite obstacles that may stand in their way. In order to generate such action, one needs to recognize clearly the values towards which the individual intends to act. Hence, these two factors are intertwined, which is clearly reflected in the wording of the items (e.g., “Even when times got tough, I was still able to take steps toward what I value in life”).

It is notable that the Experiential Avoidance factor tended to have little in common with the other factors on the inflexibility dimension, even though the items loaded quite strongly on their parent factor. Although surprising, similar results were obtained in the Italian validation of the MPFI (Landi et al., 2021). Furthermore, it is worth noting the low correlations between both the Acceptance and its inverse Experiential Avoidance subscales and the self-report questionnaires (i.e., AAQ-II, AFQ-Y8, GHQ-12, SWLS, and DERS-16). However, the same pattern of unexpected results were shown in both the Italian and partly in the French (MPFI-24) validations of the MPFI (Grégoire et al., 2020; Landi et al., 2021), where these subscales exhibited weak correlations with some theoretically related measures

(e.g., AAQ-II, SWLS). The pattern of weak correlations with instruments that intend to measure related ACT processes, reported in several MPFI validation studies, need to be evaluated in future studies, as this indicates that the sub-scales might not reflect the constructs that they intend to. One possible explanation for the lack of robust associations with other constructs, initially put forth by Landi et al. (2021), is that data were collected during the Covid-19 pandemic where experiential avoidance provided some short-term relief from discomfort, resulting in a lack of association between Experiential Avoidance facet and measures of health (i.e., SWLS and GHQ) in the current study.

Our initial evaluation of the Swedish MPFI suggests that the instrument is psychometrically sound. However, the 60-item version of the MPFI is relatively time consuming to complete and might therefore not be suitable in clinical or research purposes that require a more rapid administration. Rolffs et al. (2018) used item response theory to develop a brief version of the instrument (MPFI-24), which has later shown good fit with a 2-factor higher order model (Grégoire et al., 2020). An initial evaluation of our data by item response theory (analyses not reported), as well as inspection of the factor loadings and the convergent validity of the subscales suggests that development of a Swedish brief MPFI is a feasible task. During the work, we encountered issues related to how the underlying theory is reflected in the wording of the MPFI. The biggest theoretical inconsistency was found in Defusion, which is described along the lines of “defusion involves learning to be consciously aware of one’s thinking as it occurs” (Hayes et al., 2011b, p.23). Yet, only two of five items in the Defusion factor of the MPFI contain content that corresponds to thinking or thoughts in any way, and neither of these are included in the brief version of the instrument that was developed by the original authors of the MPFI (Rolffs et al., 2018). Thus, we argue that this is an item cluster in which some of the content might depart from the underlying construct, which should be taken into consideration when developing brief versions of the MPFI. One suggestion for future studies may be to test a brief version of the instrument alongside interviews with participants to hear them talk about their thoughts in relation to the specific items, in order to more conclusively match the underlying theoretical constructs with respondents’ subjective experiences.

In conclusion, a transdiagnostic approach to psychopathological processes needs to consider the importance of psychological flexibility, and the availability of reliable and valid measures is

therefore crucial. Our findings showed that the Swedish version of the MPFI provided support for the 12-factor structure. The factors in the final model showed evidence of good composite reliability and good convergent validity, along with satisfactory concurrent validity. However, there was an indication of non-independence between two of the flexibility factors; Values and Comitted Action. The MPFI has considerable promise in providing a nuanced measure of psychological health, as it not only presents an opportunity to distinguish between the individual differences in flexibility and inflexibility, but also offers support for six separate factors in these higher order dimensions.

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Tables and Figures

Table 1.

Demographics

Variable	<i>n</i>	<i>M</i> , % (<i>SD</i> , range)
Total responses	670	-
Age	607	39.78 (15.61, 18-78)
Gender-Female	361	59.5%
Gender-Male	237	39.0%
Gender-Other	9	1.5%
Currently Employed	331	49.4%
Student	161	24.0%
Education >15years	253	37.8%
Currently in counseling	130	19.4%

Table 2.

Confirmatory factor analyses: Model-fit indices for a one-factor higher order, two-factor higher order and a 12-factor model.

Model	χ^2 (df)	CFI	TLI	RMSEA	SRMR	AIC	BIC
1-factor higher order	3806.66 (1770)	.901	.897	.043	.104	104007.15	104601.92
2-factor higher order	3130.68 (1697)	.933	.930	.036	.072	103051.33	103650.60
12-factor	2596.15 (1644)	.955	.952	.029	.047	102443.72	103281.80

Note; χ^2 = Satorra-Bentler scaled Chi-square (*df* = degrees of freedom); CFI = Comparative Fit Index; TLI = Tucker-Lewis index; RMSEA = Root Mean Square Error of Approximation and 90% confidence interval; SRMR = Standardized Root Mean Square Residual; AIC = Akaike's Information Criterion; BIC = Bayes Information Criterion. **Bold indicates the best fitting factor solution.**

Psychometric Evaluation of the Swedish Multidimensional Psychological Flexibility Inventory

Table 3. *Factor loadings for the 12-factor model*

Global dimension/subscale/item (Flexibility)			Global dimension/subscale/item (Inflexibility)				
	<i>b</i>	<i>SE</i>	α		<i>b</i>	<i>SE</i>	α
Acceptance			.80	Experiential Avoidance			.90
I was receptive to observing unpleasant thoughts and feelings without interfering with them.	.438	.056		When I had a bad memory, I tried to distract myself to make it go away	.770	.042	
I tried to make peace with my negative thoughts and feelings rather than resisting them	.685	.045		I tried to distract myself when I felt unpleasant emotions.	.767	.041	
I made room to fully experience negative thoughts and emotions, breathing them in rather than pushing them away	.794	.043		When unpleasant memories came to me, I tried to put them out of my mind.	.833	.039	
When I had an upsetting thought or emotion, I tried to give it space rather than ignoring it	.746	.043		When something upsetting came up, I tried very hard to stop thinking about it.	.824	.040	
I opened myself to all of my feelings, the good and the bad	.665	.044		If there was something I didn't want to think about, I would try many things to get it out of my mind	.794	.038	
Present Moment Awareness			.85	Lack of Contact with Present Moment			.86
I was attentive and aware of my emotions.	.783	.034		I did most things on "automatic" with little awareness of what I was doing.	.544	.046	
I was in tune with my thoughts and feelings from moment to moment.	.619	.045		I did most things mindlessly without paying much attention.	.726	.040	
I paid close attention to what I was thinking and feeling.	.801	.036		I went through most days on autopilot without paying much attention to what I was thinking or feeling.	.807	.040	
I was in touch with the ebb and flow of my thoughts and feelings.	.777	.038		I floated through most days without paying much attention.	.791	.040	
I strived to remain mindful and aware of my own thoughts and emotions.	.689	.044		Most of the time, I was just going through the motions without paying much attention.	.815	.038	
Self as Context			.87	Self as Content			.93
Even when I felt hurt or upset, I tried to maintain a broader perspective.	.692	.042		I thought some of my emotions were bad or inappropriate and I shouldn't feel them.	.795	.042	
I carried myself through tough moments by seeing my life from a larger viewpoint.	.771	.039		I criticized myself for having irrational or inappropriate emotions.	.850	.040	
I tried to keep perspective even when life knocked me down.	.809	.036		I believed some of my thoughts are abnormal or bad and I shouldn't think that way.	.879	.038	
When I was scared or afraid, I still tried to see the larger picture.	.782	.039		I told myself that I shouldn't be feeling the way I'm feeling.	.884	.039	
When something painful happened, I tried to take a balanced view of the situation.	.763	.038		I told myself I shouldn't be thinking the way I was thinking.	.844	.039	
Defusion			.90	Fusion			.93
I was able to let negative feelings come and go without getting caught up in them.	.793	.040		Negative thoughts and feelings tended to stick with me for a long time.	.837	.041	
When I was upset, I was able to let those negative feelings pass through me without clinging to them	.827	.038		Distressing thoughts tended to spin around in my mind like a broken record.	.888	.035	
When I was scared or afraid, I was able to gently experience those feelings, allowing them to pass.	.815	.036		It was very easy to get trapped into unwanted thoughts and feelings.	.880	.037	
I was able to step back and notice negative thoughts and feelings without reacting to them.	.778	.040		When I had negative thoughts or feelings, it was very hard to see past them.	.868	.036	
In tough situations, I was able to notice my thoughts and feelings without getting overwhelmed by them.	.803	.037		When something bad happened, it was hard for me to stop thinking about it.	.813	.039	
Values			.88	Lack of Contact with Values			.92
I was very in-touch with what is important to me and my life.	.733	.040		My priorities and values often fell by the wayside in my day-to-day life.	.823	.038	
I stuck to my deeper priorities in life.	.796	.037		When life got hectic, I often lost touch with the things I value.	.847	.040	
I tried to connect with what is truly important to me on a daily basis.	.759	.038		The things that I value the most often fell off my priority list completely.	.859	.039	
Even when it meant making tough choices, I still tried to prioritize the things that were important to me.	.789	.034		I didn't usually have time to focus on the things that are really important to me.	.827	.039	
My deeper values consistently gave direction to my life.	.765	.040		When times got tough, it was easy to forget about what I truly value.	.798	.040	
Committed Action			.87	Inaction			.93
Even when I stumbled in my efforts, I didn't quit working toward what is important.	.766	.038		Negative feelings often trapped me in inaction.	.822	.039	
Even when times got tough, I was still able to take steps toward what I value in life.	.834	.034		Negative feelings easily stalled out my plans.	.867	.038	
Even when life got stressful and hectic, I still worked toward things that were important to me	.801	.036		Getting upset left me stuck and inactive.	.876	.037	
I didn't let setbacks slow me down in taking action toward what I really want in life.	.719	.042		Negative experiences derailed me from what's really important.	.871	.038	
I didn't let my own fears and doubts get in the way of taking action toward my goals.	.682	.044		Unpleasant thoughts and feelings easily overwhelmed my efforts to deepen my life.	.809	.043	

Note. *b* = standardized factor loadings; *SE* = standard error; α = Cronbach's alpha for each subscale.

Table 4.

Results of the multi-group tests of invariance for age. The deltas represent the change in relation to the previous level of measurement invariance.

Model	$\Delta\chi^2$ (Δdf)	CFI	ΔCFI	RMSEA	$\Delta RMSEA$	SRMR	$\Delta SRMR$
<i>Age Invariance</i>							
Configural	-	.946	-	.033	-	.054	-
Metric	50.66 (48)	.945	-.001	.033	.000	.056	.002
Scalar	175.39 (48)	.942	-.003	.033	.000	.057	.001
Residual	404.40 (60)	.925	-.017	.038	.005	.057	.000
<i>Gender Invariance</i>							
Configural	-	.941	-	.034	-	.056	-
Metric	51.44 (48)	.941	.000	.034	.000	.059	.003
Scalar	194.10 (48)	.938	-.003	.035	.001	.059	.000
Residual	129.50 (60)	.946	.008	.032	-.003	.060	.001

Note; Estimates for χ^2 , CFI and RMSEA are based on Satorra-Bentler scaled Chi-square statistics.

$\Delta\chi^2$ = Satorra–Bentler scaled difference; CFI = Comparative Fit Index; TLI = Tucker-Lewis index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

Table 5.

Indicators of internal consistency and validity (and factor correlations) for the 12-factor structure.

Factor	CR	AVE	MSV	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Acceptance	.803	.457	.437	-										
2. Present Moment Awareness	.855	.543	.437	.661	-									
3. Self-as-Context	.875	.583	.564	.482	.605	-								
4. Defusion	.901	.645	.564	.457	.472	.751	-							
5. Values	.879	.592	.828	.398	.593	.712	.624	-						
6. Committed Action	.878	.580	.828	.390	.546	.736	.692	.910	-					
7. Experiential Avoidance	.897	.634	.084	-.174	.001	.061	.033	.133	.108	-				
8. Lack of Contact with the Present Moment	.858	.553	.372	-.222	-.296	-.288	-.213	-.390	-.327	.290	-			
9. Self-as-Content	.929	.722	.484	-.154	-.135	-.323	-.406	-.370	-.395	.278	.523	-		
10. Fusion	.933	.735	.613	-.142	-.161	-.404	-.605	-.420	-.476	.234	.480	.696	-	
11. Lack of Contact with Values	.917	.688	.457	-.154	-.239	-.360	-.417	-.570	-.556	.141	.610	.592	.676	-
12. Inaction	.928	.721	.630	-.156	-.233	-.413	-.497	-.528	-.564	.142	.570	.667	.783	.794

Note. CR = Composite Reliability; AVE = Average Variance Extracted; MSV = Maximum Shared squared variance.

Table 6.

Pearson Correlation matrix

Variable	AAQ-II	AFQ-Y8	GHQ-12	SWLS	DERS-16	Flexibility	Inflexibility
AAQ-II	-						
AFQ-Y8	.776**	-					
GHQ-12	.729**	.629**	-				
SWLS	-.531**	-.406**	-.670**	-			
DERS-16	.803**	.832**	.632**	-.400**	-		
Flexibility	-.484**	-.393**	-.537**	.476**	-.426**	-	
Inflexibility	.748**	.734**	.629**	-.440**	.763**	-.446**	-
1. Acc	-.128**	-.069	-.155**	.163**	-.109**	.626**	-.168**
2. PrMoAw	-.234**	-.167**	-.297**	.259**	-.162**	.751**	-.216**
3. SelfCtx	-.390**	-.331**	-.423**	.381**	-.356**	.837**	-.351**
4. Defusion	-.487**	-.390**	-.503**	.430**	-.467**	.796**	-.441**
5. Values	-.478**	-.412**	-.527**	.462**	-.415**	.825**	-.437**
6. CoAc	-.501**	-.425**	-.562**	.488**	-.437**	.827**	-.443**
7. ExpAv	.121**	.150**	.031	-.017	.134**	.039	.443**
8. LCPM	.423**	.438**	.389**	-.274**	.445**	-.302**	.696**
9. SelfCon	.668**	.652**	.506**	-.326**	.678**	-.348**	.812**
10. Fusion	.723**	.650**	.605**	-.449**	.714**	-.438**	.832**
11. LCV	.616**	.626**	.566**	-.418**	.642**	-.446**	.806**
12. Inaction	.724**	.720**	.659**	-.457**	.745**	-.467**	.846**

Note. ** = $p < .01$; Acc = Acceptance; PrMoAw = Present Moment Awareness; SelfCtx = Self as Context; CoAc = Committed Action; ExpAv = Experiential Avoidance; LCPM = Lack of Contact with the Present Moment; SelfCon = Self as Content; LCV = Lack Contact with Values; AAQ-II = Acceptance and Action Questionnaire; AFQ-Y8 = Avoidance and Fusion Questionnaire-Youth 8-items; GHQ-12 = General Health Questionnaire 16-item version; SWLS = Satisfaction with Life Scale; DERS-16 = Difficulties in Emotion Regulation Scale; Flexibility = higher order factor in the Multidimensional Psychological Flexibility Inventory; Inflexibility = higher order factor in the Multidimensional Psychological Flexibility Inventory.

Multidimensional Psychological Flexibility Inventory (MPFI) – Svensk översättning

Avsikten med detta formulär är att ge en bild av hur du brukar förhålla dig till olika tankar och känslor. Utgå från de senaste två veckorna och välj hur väl respektive påstående stämmer in på dig.

DEL 1

1.1

UNDER DE SENASTE TVÅ VECKORNA...	ALDRIG	SÄLLAN	IBLAND	OFTA	MYCKET OFTA	ALLTID
1. Jag kunde lägga märke till mina obehagliga tankar och känslor utan att försöka påverka dem.	☐	☐	☐	☐	☐	☐
2. Jag försökte försonas med mina negativa tankar och känslor snarare än att motarbeta dem	☐	☐	☐	☐	☐	☐
3. Jag försökte att uppleva mina negativa tankar och känslor fullt ut, accepterade dem istället för att trycka tillbaka dem.	☐	☐	☐	☐	☐	☐
4. När jag fick en upprörande tanke eller känsla, så försökte jag ge den plats snarare än att ignorera den.	☐	☐	☐	☐	☐	☐
5. Jag öppnade upp mig för alla mina känslor, de positiva och de negativa	☐	☐	☐	☐	☐	☐

1.2

UNDER DE SENASTE TVÅ VECKORNA...	ALDRIG	SÄLLAN	IBLAND	OFTA	MYCKET OFTA	ALLTID
6. Jag var uppmärksam och medveten om mina känslor	☐	☐	☐	☐	☐	☐
7. Jag var samstämmig med mina tankar och känslor i varje stund.	☐	☐	☐	☐	☐	☐
8. Jag var mycket uppmärksam på vad jag tänkte och kände	☐	☐	☐	☐	☐	☐
9. Jag var i kontakt med mina tankars och känslors toppar och dalar	☐	☐	☐	☐	☐	☐
10. Jag strävade efter att vara uppmärksam och medveten om mina egna tankar och känslor	☐	☐	☐	☐	☐	☐

1.3

UNDER DE SENASTE TVÅ VECKORNA...	ALDRIG	SÄLLAN	IBLAND	OFTA	MYCKET OFTA	ALLTID
11. Även när jag kände mig sårad eller upprörd försökte jag behålla ett bredare perspektiv	☐	☐	☐	☐	☐	☐
12. Jag tog mig genom tuffa stunder genom att se mitt liv från ett större perspektiv.	☐	☐	☐	☐	☐	☐
13. Jag försökte vara klarsynt även när livet var tufft	☐	☐	☐	☐	☐	☐
14. När jag var skärrad eller rädd försökte jag fortfarande se den större bilden	☐	☐	☐	☐	☐	☐
15. När något smärtsamt inträffade så försökte jag inta en sansad syn på situationen	☐	☐	☐	☐	☐	☐

1.4

UNDER DE SENASTE TVÅ VECKORNA...	ALDRIG SÄLLAN		IBLAND	OFTA	MYCKET OFTA	ALLTID
16. Jag kunde låta negativa känslor komma och gå utan att bli fångad i dem	☐	☐	☐	☐	☐	☐
17. När jag var upprörd kunde jag låta de negativa känslorna passera utan att hålla fast vid dem	☐	☐	☐	☐	☐	☐
18. När jag var skärrad eller rädd kunde jag varsamt uppleva känslorna och låta dem passera	☐	☐	☐	☐	☐	☐
19. Jag kunde ta ett steg tillbaka och notera negativa tankar och känslor utan att reagera på dem	☐	☐	☐	☐	☐	☐
20. I svåra situationer kunde jag lägga märke till mina tankar och känslor utan att det blev överväldigande	☐	☐	☐	☐	☐	☐

1.5

UNDER DE SENASTE TVÅ VECKORNA...	ALDRIG SÄLLAN		IBLAND	OFTA	MYCKET OFTA	ALLTID
21. Jag hade klart för mig vad som är viktigt för mig i livet	☐	☐	☐	☐	☐	☐
22. Jag höll fast vid mina grundläggande prioriteringar i livet	☐	☐	☐	☐	☐	☐
23. Varje dag försökte jag komma i kontakt med det som verkligen är viktigt för mig	☐	☐	☐	☐	☐	☐
24. Även när det handlade om att ta tuffa beslut så försökte jag prioritera de saker som var viktiga för mig	☐	☐	☐	☐	☐	☐
25. Mina grundvärderingar gav mig ständigt vägledning i livet	☐	☐	☐	☐	☐	☐

1.6

UNDER DE SENASTE TVÅ VECKORNA...	ALDRIG SÄLLAN		IBLAND	OFTA	MYCKET OFTA	ALLTID
26. Även då jag stötte på patrull så slutade jag inte att arbeta för det som är viktigt	☐	☐	☐	☐	☐	☐
27. Även under svåra stunder hade jag förmågan att närma mig det jag värdesätter i livet	☐	☐	☐	☐	☐	☐
28. Även när livet blev stressigt och hektiskt strävade jag fortfarande mot sådant som var viktiga för mig	☐	☐	☐	☐	☐	☐
29. Jag lät inte motgångar hindra mig i att sträva mot det jag verkligen vill i livet	☐	☐	☐	☐	☐	☐
30. Jag lät inte mina rädslor och tvivel komma i vägen för mitt arbete mot mina mål	☐	☐	☐	☐	☐	☐

DEL 2**2.1**

UNDER DE SENASTE TVÅ VECKORNA...	ALDRIG SÄLLAN		IBLAND	OFTA	MYCKET OFTA	ALLTID
31. När jag mindes något hemskt försökte jag distrahera mig själv för att det skulle försvinna	☐	☐	☐	☐	☐	☐
32. Jag försökte distrahera mig själv när jag kände obehagliga känslor	☐	☐	☐	☐	☐	☐
33. När jag mindes otrevliga minnen försökte jag få dem ur huvudet	☐	☐	☐	☐	☐	☐
34. När något upprörande dök upp, försökte jag verkligen att sluta tänka på det	☐	☐	☐	☐	☐	☐
35. Om det var något jag inte ville tänka på, så försökte jag på olika sätt att få det ur huvudet	☐	☐	☐	☐	☐	☐

2.2

UNDER DE SENASTE TVÅ VECKORNA...	ALDRIG SÄLLAN		IBLAND	OFTA	MYCKET OFTA	ALLTID
36. Jag gjorde de flesta saker "automatiskt" utan att tänka särskilt mycket på vad jag gjorde	☐	☐	☐	☐	☐	☐
37. Jag gjorde de flesta saker utan medveten närvaro och utan att bry mig så mycket	☐	☐	☐	☐	☐	☐
38. Jag tog mig igenom de flesta dagar på autopilot utan att bry mig särskilt mycket om vad jag tänkte eller kände	☐	☐	☐	☐	☐	☐
39. Jag flöt genom de flesta dagar utan att vara särskilt fokuserad.	☐	☐	☐	☐	☐	☐
40. För det mesta gick jag på rutin utan att bry mig så mycket	☐	☐	☐	☐	☐	☐

2.3

UNDER DE SENASTE TVÅ VECKORNA...	ALDRIG SÄLLAN		IBLAND	OFTA	MYCKET OFTA	ALLTID
41. Jag tyckte en del av mina känslor var osunda eller olämpliga och att jag inte borde känna dem	☐	☐	☐	☐	☐	☐
42. Jag kritiserade mig själv för att jag hade irrationella eller olämpliga känslor	☐	☐	☐	☐	☐	☐
43. Jag trodde att en del av mina tankar var onormala eller osunda och att jag inte borde tänka på det sättet	☐	☐	☐	☐	☐	☐
44. Jag sa till mig själv att jag inte borde känna på det sätt som jag känner	☐	☐	☐	☐	☐	☐
45. Jag sade till mig själv att jag inte borde tänka på det sätt jag tänker	☐	☐	☐	☐	☐	☐

2.4

UNDER DE SENASTE TVÅ VECKORNA...	ALDRIG SÄLLAN		IBLAND	OFTA	MYCKET OFTA	ALLTID
46. Negativa tankar och känslor tenderade att etsa sig fast under längre tid.	☐	☐	☐	☐	☐	☐
47. Jobbiga tankar tenderade att snurra runt i mitt huvud om och om igen	☐	☐	☐	☐	☐	☐
48. Det var väldigt lätt att fångas i oönskade tankar och känslor	☐	☐	☐	☐	☐	☐
49. När jag fick negativa tankar eller känslor var det väldigt svårt att se bortom dem	☐	☐	☐	☐	☐	☐
50. När någonting jobbigt inträffade var det svårt för mig att sluta tänka på det	☐	☐	☐	☐	☐	☐

2.5

UNDER DE SENASTE TVÅ VECKORNA...	ALDRIG SÄLLAN		IBLAND	OFTA	MYCKET OFTA	ALLTID
51. Mina prioriteringar och värderingar föll ofta åt sidan i mitt dagliga liv	☐	☐	☐	☐	☐	☐
52. När livet blev hektiskt förlorade jag ofta kontakten med de saker jag värdesätter	☐	☐	☐	☐	☐	☐
53. De saker jag värdesätter mest ramlade för det mesta bort från min prioriteringsordning	☐	☐	☐	☐	☐	☐
54. Jag hade oftast inte tid att fokusera på de saker som verkligen är viktiga för mig	☐	☐	☐	☐	☐	☐
55. När det var hårda tider var det lätt att glömma det jag verkligen bryr mig om.	☐	☐	☐	☐	☐	☐

2.6

UNDER DE SENASTE TVÅ VECKORNA...	ALDRIG SÄLLAN		IBLAND	OFTA	MYCKET OFTA	ALLTID
56. Negativa känslor gjorde mig passiv	☐	☐	☐	☐	☐	☐
57. Negativa känslor stoppade lätt mina planer	☐	☐	☐	☐	☐	☐
58. Att bli upprörd gjorde att jag fastnade och blev inaktiv	☐	☐	☐	☐	☐	☐
59. Negativa upplevelser fick mig att tappa fokus på det som verkligen är viktigt	☐	☐	☐	☐	☐	☐
60. Obehagliga tankar och känslor slog enkelt ned mina försök att hitta en djupare mening i mitt liv	☐	☐	☐	☐	☐	☐

PERMISSION FOR USE: The Swedish MPFI is freely available for research and clinical use. No further permission is required beyond this form and the authors will not generate study-specific permission letters.

SCORING:

Subscales – To score the MPFI subscales, you assign responses point values from 1 to 6 (left to right as presented above) and then average the responses across the items of each scale so that higher scores reflect higher levels of the dimension being assessed by each set of items.

Global Composites – The averages of the 6 flexibility subscales can be averaged to create a composite representing global flexibility. Similarly, the averages of the 6 inflexibility subscales can be averaged to create a global inflexibility composite.

INTERPRETATION:

Normative Information – The research article developing the MPFI (Rolffs, Rogge, & Wilson, 2016; see citation below) presents basic normative data on its subscales (e.g., means and standard deviations by gender). That information will help to place individual scores into a larger context.

Reliable Change – The article also presents Minimal Detectable Change (MDC₉₅; Stratford, Finch, et al., 1996) estimates for each subscale and for the global composites. These MDC₉₅ estimates tell researchers and clinicians how many points an individual would need to change on each scale between assessments for that change to be statistically significant. Thus, these MDC₉₅ estimates allow ACT researchers and clinicians to identify clinically significant (i.e., reliable) change groups as suggested by Jacobson and Truax (1991).

Online Interpretative Profiles – The research team is currently working on developing algorithms to create standardized flexibility/inflexibility profiles for use in clinical settings. Although use of the MPFI will remain open and free of any charges, these profiles will be available for small fees from a secure website (to cover the costs of their development and ongoing validation). Please email Dr. Rogge at rogge@psych.rochester.edu if you wish to be informed when those additional online clinical tools become available.

SCALE CITATION:

Tabrizi, F. F., Larsson, A. B., Grönvall, H., Söderstrand, L., Hallén, E., Champoux-Larsson, M-F., Lundgren, T., Sundström, F., Lavefjord, A., Buhrman, M., Sundin, Ö., McCracken, L., Åhs, F., Jansson, B. (2022, February 26). Psychometric Evaluation of the Swedish Multidimensional Psychological Flexibility Inventory (MPFI). *PsyArxiv*, <https://doi.org/10.31234/osf.io/dtbj8>.

Rolffs, J. L., Rogge, R. D., & Wilson, K. G. (2016). Disentangling Components of Flexibility via the Hexaflex Model Development and Validation of the Multidimensional Psychological Flexibility Inventory (MPFI). *Assessment*, 1073191116645905.