Validation of Decisional Procrastination Instrument

Kelvin Ling, Listyo Yuwanto, and Ide Bagus Siaputra
Faculty of Psychology
Universitas Surabaya

There are various types of procrastination, one of which is decisional procrastination (Ferrari, Johnson, & Mann, 1995). This study aimed to translate and test the validity of the Decisional Procrastination (DP) instrument in Indonesian language. The subjects in this study were 112 active psychology students of the 2010 generation. Data was collected by distributing DP instruments in two languages to each subject. Based on the two criterias of validity test proposed by AERA, APA, and NCME (1999), the translated DP instrument version (in Indonesian language) proved to meet the requirement as a valid and reliable psychological measure.

Keywords: procrastination, decision making, decisional procrastination

Prokrastinasi terdiri atas beberapa jenis, salah satunya adalah *decisional procrastination* (Ferrari, Johnson, & Mann, 1995). Penelitian ini bertujuan untuk mengalihbahasakan dan menguji validasi alat ukur DP ke dalam bahasa Indonesia. Subjek yang digunakan dalam penelitian ini adalah 112 mahasiswa fakultas psikologi angkatan 2010. Pengambilan data dilakukan dengan membagikan skala DP dalam dua bahasa sekaligus kepada masing-masing subjek. Berdasarkan dua kriteria uji validitas yang diusulkan oleh AERA, APA, dan NCME (1999) diketahui bahwa DP dalam versi terjemahan (bahasa Indonesia) terbukti memenuhi kaidah sebagai alat ukur psikologis yang valid dan reliabel.

Katakunci: prokrastinasi, pengambilan keputusan, *decisional procrastination*

Procrastination occurs in every individual regardless of age, gender, or status as workers or students (Burka & Yuen, in Husetiya, nd). Steel (2007) explains that procrastination is a voluntary delay to a series of tasks despite knowing that in the future it will be even worse. According to Ferrari, Johnson, and McCown (1995), there are several types of procrastination, one of which is the decisional procrastination or procrastination in decision making.

Janis and Mann (as cited in Fabio, 2006) states that decisional procrastination means a strong tendency to be unable to make a timely decision. Burka and Yuen (1983), defines the decisional procrastination as an avoidance to decide that is done deliberately and repeatedly in a given time interval. Individuals delay a decision on a matter because it is not his/her main priority (low priority), or they want to think about it again before deciding and taking an action (Burka & Yuen, 1983). Procrastination has an adverse impact, and it is not infrequently that this habit humiliates the person who engaged in it (Siaputra, 2011).

Siaputra (2011) explains that procrastination often economy, politics, law, etc. In the economic field, for happened in various fields of human life such as sports,

example, the Greek political party leaders delayed their decision to accept or decline the requirements of the bailout that seems difficult. In fact, sooner or later the decision must be made to avoid bankruptcy and warnings from the Eurozone countries that say that they can survive without Greece (Halimah, 2012).

In addition, the decisional procrastination is also found in the field of education. Karas and Spada (2009) conducted a study on the effectiveness of Cognitive Behavioral Coaching to reduce the procrastination intensity on individuals. Subjects in this study were 7 students who felt that they had reached the stage of chronic procrastination and fulfill certain criteria. The instrument used was the original Mann's Decisional Procrastination (DP) scale (with 5 responses) and Lay's General Procrastination (GP) scale (Karas & Spada, 2009). In that study, Karas and Spada found as many as 7 people (100%) showed a high decisional procrastination score with a mean of 21.2 ($SD = 1.1$; range = 19.6 - 22.4). This result was obtained by the measurements that were done on 4 consecutive weeks to determine the baseline score (initial boundary).

From the supporting evidences above, it can be concluded that the phenomenon of procrastination in decision making is still common in many people's lives. Although the negative effects of procrastination in deci-

Correspondence concerning this article should be addressed to I. B. Siaputra, Faculty of Psychology Universitas Surabaya. Jalan Raya Kalirungkut, Surabaya 60293. E-mail: siaputra@gmail.com

sion making were already known and felt by many, there are still many people who keep engage in it. Therefore, the researcher is interested to examine procrastination in decision making as a topic in this study. Mann (as cited in Ferrari, Johnson, & McCown, 1995) developed the Decisional Procrastination (DP) scale, a scale to measure the levels of procrastination in decision making of a person. This scale is based on the theory of conflict in decision making from Janis and Mann in 1977 (Ferrari, Johnson, & McCown, 1995). Compared with the other procrastination on decision making instruments such as Adolescent Decision-Making Questionnaire (ADMQ; Lane, 2010), Decision About Important Matters (DAIM; taken from the laboratory of General Psychology data-base, Faculty of Psychology University of Surabaya), Indecisiveness Scale (IS; Frost & Shows in Fischer & Corcoran, 2007), and the Routine Decision of Daily Life (RDDL; taken from the laboratory of General Psychology database, Faculty of Psychology University of Surabaya), DP has a fewer number of items (5 items). In addition, according to Ferrari, Johnson, and McCown (1995) DP is widely used in research, especially for non-clinical populations such as students.

In this study, the researcher intends to translate DP instrument into Indonesian language, the native language of the country where the study is conducted. The translated DP instrument will be tested using several psychometry validity criteria (internal structure, relationship with other variables, etc.) to prove whether the DP in the Indonesian language is valid and reliable. In the end, the result of this study can be used for the development of psychological knowledge.

Decisional Procrastination

There are a number of definitions of decisional procrastination. Effert and Ferrari (as cited in Karas & Spada, 2009) defines decisional procrastination as a reasoned delay to make a decision within a period of time. Meanwhile, according to Janis and Mann's theory of conflict in decision making from which the formation of DP instrument is based on, decisional procrastination is a maladaptive coping behavior used by someone in the face of conflict and choice (Ferrari, Johnson, & McCown, 1995). Based on the above three definitions, researcher concluded decisional procrastination as an individual tendency to postpone decision making within a certain period of time.

Decisional Procrastination Instrument

Ferrari, Johnson, and McCown (1995) mentioned that there are seven instruments to measure procrastination.

The seven instruments are Procrastination Assessment Scale-Student (PASS), Aitken Procrastination Inventory (API), Tuckman Procrastination Scale (IPS), General Procrastination (GP) Scale, Decisional Procrastination (DP) Scale, Adult Inventory of Procrastination (AIP), and Tel-Aviv Procrastination (TAP) Inventory. Meanwhile, according to Fischer and Corcoran (2007), there are three types of instruments that measure procrastination, which are Indecisiveness Scale (IS), Procrastination Academic Student Scale (PASS), and Procrastination Scale (PS). From all the procrastination instruments there are only two instruments that measure procrastination in decision-making, which are Decisional Procrastination (DP) scale and Indecisiveness Scale (IS).

DP scale is a scale to measure procrastination behaviors associated with decision making situations developed by Mann in 1982 (Ferrari, Johnson, & McCown, 1995). This scale is based on the theory of conflict in decision making from Janis and Mann in 1977. DP scale consists of five items and each item has five responses using Likert scale (1 – 5). According to Ferrari, Johnson, and McCown (1995), the five items in the DP scale were focused on measuring the construct of decisional procrastination. This proves that the DP scale has only one aspect (single aspect) which measures the attitudes (decisional) and behavior of procrastination in decision making.

Another scale that measures procrastination in decision making is Indecisiveness Scale (IS). This scale is a tool to measure indecisiveness as a symptom of obsessive compulsive disorder or commonly known as OCD (Fischer & Corcoran, 2007). IS consists of 15 questions, and was developed by Frost in 1993. The reason DP was chosen in this study is because DP was developed earlier and has been used in quite a lot of research on procrastination. DP also has fewer items compared to IS (5 items).

TMT (Temporal Motivation Theory)

In 2006, Steel and Konig develop an equation that describes the working principle of procrastination in the lives of individuals, called the Temporal Motivation Theory (TMT). Steel (2007) describes the elements used in the TMT was obtained from expectation and hyperbolic discounting theories. Besides, these elements can also be applied to need theory, prospect theory, psychobiology theory, and goal-setting theory (Steel, 2007). Elements referred to by Steel and König is expectancy, value, sensitivity to delay, and delay time.

Expectancy element is akin to the concept of self-efficacy because it describes how much hope, opportunity, and belief an individual have in a certain thing. Value element is constructed of three aspects, namely task-aversiveness,

need for achievement, and boredom prone-ness. Task aversiveness explains the degree of unpleasantness of a given task. Another definition is the level of avoidance of certain tasks. The higher the value of task aversiveness, the higher the likelihood to procrastinate on the task. Need for achievement explains the level of individual needs to achieve a goal. The higher the need for achievement, the lower the tendency to procrastinate in doing something, and vice versa. The last aspect, boredom proneness, explains the degree of boredom in doing a task. Someone is more likely to delay a task which is considered boring (high levels of boredom proneness).

The next element, sensitivity to delay is contructed of four aspects, which are distractibility, impulsiveness, lack of self-control, and age. Distractibility or distraction means how easy an inidividual distracted by other things that are more interesting than the thing he/she is doing. Impulsiveness explains the tendency of a person to directly act on something he/she wants or he/she is thinking about. The next aspect is lack of self control, which means a lack of individual control to keep on doing something and do not put it off. Age factor explains that when an individual get older, the value of the individual's sensitivity to delay will decrease.

The last element, delay/time are also consisted of three aspects, namely reward and punishment schedule, organization/disorganization, and intention-action gap. Someone will likely to delay a task that has no direct impact whether it is reward or punishment. Organization/disorganization refers to the level of regularity of a task or job. The more irregular a task, the more the individual tend to put off doing the task. The last aspect of the element is intention-action gap, whic is a certain time lapse between what is planned or thought and what is done. Or in another word, a person does not directly do something that was planned before .

In 2011, Steel revised the name of one of these components, namely sensitivity to delay, and changed it to impulsiveness, because impulsiveness is very close to and represents the sensitivity to delay as meant by Steel. Utility in this equation refers to the task completion as desired by the individual. The higher the combination of E and V, the lower the individual tendency to put off the task or job, and vice versa. Conversely, the higher the Γ components, the higher the individual tendency to delay the task. If all the components are written in an equation, it will be as shown on Figure 1.

Methods

Data collection method used in this research is population study, with the entire active students of class of 2010 (students whose study were commenced in 2010)

$$U = \frac{E \times V}{(\Gamma \times D) + 1}$$

Note.
U = Utility
E = Expectancy
V = Value
D = Delay
Γ = Sensitivity to Delay

Figure 1. Formula of Temporal Motivation Theory

of Faculty of Psychology, University of Surabaya as the subjects. Students from the class of 2010 were chosen as the subjects of this study because researcher wanted to compare the results of validity and reliability tests of DP instrument with previous study that test the validity and reliability of another procrastination instru-ment. The instrument has been tested on the class of 2010.

The instrument used for data collection is Mann's Decisional Procrastination (DP) instrument (1982) in two versions (languages), e.g. the original version (in English) and the translated version (in Indonesian language). In addition, researcher also used secondary data from other research instruments with the same subjects. The other scales are Aitken Procrastination Inventory (API; Sugito, 2012), PASS I (Amanda, 2012), PASS II (Amanda, 2012), SPS (Steel Procrastination Scale) (Putra, 2011), which the authors now rename as Temporal Motivation Test (TMt), the International Personality Item Pool (conscientiousness, Septiani, 2012) and BFI (conscientiousness, Sutejo, 2011). The data from these five instruments are correlated with the data obtained from DP as one of the requirements of validity evidence (based on relationships with other variables).

Initial Validation of the Instrument

Prior to the data collection, researcher conducted preliminary surveys twice to a group of subjects. The first preliminary survey was distributed to 40 students from four classes (2010, 2009, 2008, and 2007) of the Faculty of Psychology, University of Surabaya. The scale used is the DP in two versions, the original version (in language and format) from Mann and the translated version in the Indonesian language.

The second preliminary survey was carried out collectively with some other instruments from several researchers. The subjects used were all students who were taking the laboratory of General Psychology Research Proposal course, who were taking the procrastination topic (28 students). The scale used is DP with three different formats, namely with respectively five, four, and two responses.

Data Analysis

Data analyses were conducted in several stages, namely reliability test (of total scale and items), normality test of data distribution, and validity test. Reliability test was done by using Alpha Cronbach ($\alpha > .7$; Netemeyer, 2001) for the total scale, corrected item total correlation ($x > .3$; Hemphill, 2003) for each item, and parallel-form (product moment correlation test). Then the instrument will be tested for normality with Kolmogorov-Smimov technique with the coefficient of greater than .05 ($p > .05$; Faculty of Psychology University of Surabaya, 2005).

Validity test itself was done in two ways, namely validity based on internal structure (factor analysis) and relationships with other variables. Factor analysis was conducted by using four criteria for testing, e.g. latent root criterion (factors with Eigen values > 1), percentage of-variance explained (first factor with a cumulative percentage above 50%), and substansially load criterion (factor with at least three items, each of which has .4 loading factor). Validity test based on relationships with other variables was performed using parametric product moment correlation (Pearson correlation) when the data distribution is normal, and non-parametric (Spearman correlation) when the data distribution is not normal. The requirements are correlation value $r > .3$ or $r > -.3$ (Hemphill, 2003) and the significance value $p < .05$ (Anastasi & Urbina, 1997).

Result

Research Subjects

Subjects in this study are all active students of class of 2010, Faculty of Psychology, University of Surabaya. From the total 112 subjects, 77.68% or 87 subjects are female and the rest 22.32% or 25 subjects are male.

Based on the results of frequency distribution using group norm, several categories of decisional procrastination were obtained. From DPe (original version) it is found that the majority of subjects (42 male; 37.5%) have decisional procrastination level above average. Similar result was also found on the measurement of decisional procrastination measurements using DPi (Indonesian version).

Reliability

Based on the results of reliability test it is found that both DP instruments are reliable. This is proven by adequate Alpha Cronbach values of $\alpha > .7$ for both

instruments. In DPe the Alpha Cronbach value obtained is .719, while in DPi the Alpha Cronbach value obtained is .740. These results are also supported by the results of reliability test of every item in DPe and DPi. All items in DPe and DPi are classified as reliable as each of them has an adequate corrected item total correlation (CITC) score ($x > .3$).

On testing reliability by parallel-form, which is done by correlating the two types of measuring instruments namely DPe and DPi, similar results were also found. Although given in two different languages, both instruments are proven to consistently measure the same thing. It can be seen from the correlation results of both instruments that are categorized as adequate, which is .943 ($r > .3$).

Normality Test

Based on the results of normality tests, it is known that the level of significance of both types of DP instruments (DPe and DPi) is smaller than .05 ($p < .05$). It proved that the data distribution of both DP instruments (DPe and DPi) do not conform the normal curve. Therefore, the correlation test method (product moment) used is non-parametric test, namely Spearman correlation.

Validity Test based on Internal Structure

Before the factor analysis of DPe and DPi were conducted, the reliability of the combined items of both DP instruments was tested. The result shows the value of Alpha Cronbach of .870 ($\alpha > .7$). Thus, it can be said that all the items in the DP consistently measure the same construct. Factor analysis is then performed for each instrument (DPe and DPi) with three types of statistical criteria. The criteria are latent root, percentage of variance explained, and substansially load.

In DPe, the value of KMO-Bartlett test showed significance value of greater than .50 (.761). It could be argued that the data from DPe can be analyzed further. Furthermore, based on the testing of the latent root criterion, DPe is suggested to use a single factor. It can be seen from the total of one factor that have a value of 2.378 ($x > 1$).

Based on the percentage of variance explained, it can be seen that a single factor can explain at 47.653% (close to 50%). Meanwhile, two factors have a cumulative percentage value of 65.253% ($x > 50\%$). Therefore, based on the percentage of variance explained criterion, it is advised to use two factors in DPe.

Based on the analysis factor with substansially load criterion, DPe is suggested to use a single factor. Initially, researcher obtained data that DPe measure two factors with one item (item 1), which had cross loading between

the first and second factor. This shows that item 1 should be removed because it do not measure one factor in DPe consistently. However, the proposed two factors suggestion are not used because it has no effect or in line with the real focus of this study that wanted to test the validity of DPi.

Table 1
Total Variance Explained DPe

Component	Total	Initial eigenvalues % of variance	Cumulative %
1	2.378	47.563	47.653
2	.884	17.690	65.253
3	.694	13.884	79.137
4	.541	10.824	89.961
5	.502	10.039	100.000

Table 2
Result of Rotated Component Matrix DPe

	Component	
	1	2
Ind_3	.786	
Ind_5	.769	
Ind_4	.721	
Ind_1	.554	.526
Ind_2		.946

Tabel 3
Total Variance Explained DPi

Component	Total	Initial eigenvalues % of variance	Cumulative %
1	2.465	49.290	49.290
2	0.851	17.012	66.302
3	0.679	13.576	79.878
4	0.555	11.097	90.975
5	0.451	9.025	100.000

Tabel 4
Result of Rotated Component Matrix DPi

	Component	
	1	2
Ind_3	.83	
Ind_5	.80	
Ind_1	.65	
Ind_4	.59	
Ind_2		.948

Table 5 shows the results of the overall correlation test between DP instruments with some other procrastination instruments that are used as comparisons. In Table 5 it is known that DP instruments significantly correlated with all other procrastionation instruments (PASS, API, and TMt). This means that DP has a tendency to measure the same construct with all other instruments.

Table 6 shows the results of the overall correlation test between DP instruments with other relevant variables measurements. In Table 6, it can be seen that both DP instruments have negative correlation with conscientiousness aspect, both in the IPIP and BFI. This means the higher the score on both DP instruments, the lower the score on the aspect of conscientiousness (IPIP and BFI).

Discussion

Major Hypothesis

This study was originated from the researcher desire to test whether the DPi instrument meet the standard psychometric rule (valid and reliable) as a measurement for procrastination in decision making. Based on the data analysis results, it is found that DPi is proven to meet the psychometric rule as a valid and reliable procrasti-nation measurement. This result was obtained through the method of hypothesis testing using the three validity criteria as adviced by AERA, APA, and NCME (1999). The three validity test criteria are the validity based on the response process, internal structure, and relationships with other variables.

Reliability Test

Firstly, researcher measured the reliability of both instruments (DPe and DPi). The results proved that DPe and DPi are reliable instruments because it has Alpha Cronbach value above .7. These results were also supported by the discrimination test of each item in both instruments. Further analysis show that all items in DPe and DPi has an item discrimination index that are categorized as adequate, which is greater than .3.

To strengthen the evidence that both DP instruments consistently measure the same thing, researcher then conduct discrimination test to all combined items from both DP instruments at once. The result shows adequate item discrimination index ($x > 0.3$) with Alpha Cronbach coefficient of .870. Based on the two reliability testings, it can be concluded that all the items in DPe and DPi consistently measure the same construct. However, reliability test is not sufficient to prove DPi as a standard instrument.

Furthermore, researcher also correlates DPi with DPe instrument as an evidence of parallel form reliability. As mentioned earlier, parallel form reliability is accomplished by giving two different instrument types (language) simultaneously (Anwar, 2008). From the result of correlation test using Spearman product moment technique it is known that DPi is correlated significantly with DPe. This indicates that although the instruments are in two different languages (English and Indonesian), both instruments are able to consistently measure the same construct.

Validity Test based on Internal Structure

Overall, based on the results of factor analysis using three statistical criteria (latent root, percentage of variance explained and substansially load) which have been described before, DPi is suggested to use a single factor. However, based on the percentage of variance explained criterion, this one factor only explains the overall construct of decisional procrastination by 49.290% (less than 50%). This proves that the construct of decisional procrastination in DPi is not adequately explained by only a factor (unidimensional). According to the cumulative percentage value criterion, it is suggested to use two factors in DPi (Table 3). Nevertheless, when compared with factor 2, the percentage value of factor 1 is closer to 50%.

In addition to statistical tests, researcher also conducted content analysis to the items in DPi to prove whether the sentence of every item in DPi is really measuring the same factor. When viewed as a whole, every item in DPi contains words that states that individuals postpone taking a decision. For example, the sentence in item one that says "I put off making a decision" clearly means that a person procrastinate in taking a decision.

Item two also contains sub-phrase "I do not take decision ...", which is a statement of delaying making a decision for some reasons. The same thing can be seen on the other items, namely item three, four, and five. Therefore, it can be said that all the items in DPi only measure one aspect, which is procrastination in decision making.

Validity Test based on Relationships with other variables

The next validity test compared the validity of DPi with another procrastination instruments which has been proven to be valid and reliable. Evidence of validity based on relationships with other variables explains that a measuring instrument is said to be theoretically valid if it has correlations with other instruments (Cook & Beckman, 2006). In the previous study (Mann in Ferrari, Johnson, & McCown, 1995), the original version of DP were significantly correlated with several other instru-ments such as PASS $(r = .32)$, ESIC $(r = .36)$, RSES $(r = -.39)$, and STAI $(r = .7)$.

Therefore, in this study PASS is used as one of the benchmark instrument to prove whether DPi has an adequate correlation like the original instrument. Based on the results of correlation test between DPi with the two PASS instruments (PASS I and PASS U), significant correlations were found. In addition, researcher also conducted Fischer test between the correlation value of DPi and PASS in this study with the correlation of Mann's original version of the DP and PASS from Beswick, Rothblum, and Mann (1988). The result shows the value of $z = -.13455$ ($z > 1.96$) and the value of $p = .893$ ($p > .05$). This proves that there is an agreement between the measurement results of DP and PASS in this research and in the previous research (Beswick, Rothblum, & Mann, 1988).

In addition to comparison with the other procrastination instruments, DPi was also compared with other variables associated with procrastination to prove whether DPi measurement result is in accordance with procrastination constructs (meta-analysis of Steel). In his meta-analysis, Steel found that procrastination has a negative correlation with one of the personality factors, namely conscientiousness (self-consciousness; $p = -.75$). Procrastination is a representation of the attitude of someone who has a low conscientiousness and fails to regulate oneself (Steel, 2007). Therefore, this study used two scales (BFI and IPIP) that measure conscientiousness as a personality factor.

The result obtained in this study is in accordance with the meta-analysis of Steel. Based on the correlation test of DPi total value and aspects of conscientiousness both IPIP and BFI, a negative correlation was found (Table 6). This suggests that the higher the score on procrastina-tion scale, the lower the score on conscientiousness aspects (IPIP and BFI). Based on this statistical test result, we can conclude that individuals who have high levels of conscientiousness are less likely to procrastinate in taking decisions, and vice versa.

According to theoretical studies using TMT point of view, DPi was proven to be capable to measure all TMT aspects (expectancy, value, and impulsiveness). In this study, all aspects of TMT were represented by TMt instrument that measure expectancy, value, and impulsiveness separately (Steel, 2011). Based on the correlation test results between DPi with TMt aspects, it was found that there were significant correlations between DPi with all TMt aspects (Table 5). This suggests that DPi is able to measure expectancy, value, and impulsiveness that are the components of TMT.

Furthermore, to obtain a more specific understanding related to which items in DPi that measures all three aspects,

Tabel 5

Overall results of DP Correlation Test With OtherDP Procrastination Measurement Instrument

Measurement Device	PASS I r(p)	PASS II r(p)	API r(p)	TMt		
				E r(p)	V r(p)	I r(p)
DPe DPi	.331 (.000)	.330 (.000)	.477 (.000)	-.288 (.001)	.245 (.005)	.280 (.001)
	.306 (.001)	.317 (.000)	.425 (.000)	-.329 (.000)	.259 (.003)	.249 (.004)

Tabel 6

Overall Results of DP Correlation Test With Other Relevant Variable Measurement Instrument

AlatUkur	Conscientiousness aspect	
	IPIP r(p)	BFl r(p)
DPe DPi	-.441 (.000)	-.259 (.003)
	-.432 (.000)	-.260 (.003)
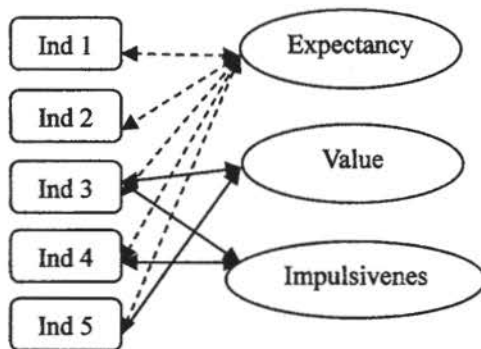
Note.
Ind_1 = Item 1 DPi
Ind_2 = Item 2 DPi
Ind_3 = Item 3 DPi
Ind_4 = Item 4 DPi
Ind_5 = Item 5 DPi
⟷ Positive correlation (+)
⟵- -⟶ Negative correlation (-)
r value is shown at Appendix

Figure 2. Correlation test of DP-i items with TMt

researcher then test the correlation of each item in DPi with the total value of each TMt aspect. Based on the correlation test results of DPi items with the total value of TMt aspects, the following results were obtained (see Figure 2).

Figure 2 shows the results of correlation test between DPi items with the total value of each TMt aspect. In the table it can be seen that all DPi items are correlated significantly with TMt aspect of expectancy. These results provide evidence that there is a correlation between the total value of DPi with the expectancy aspect of TMT The significant correlation ($r = -.329$) between the expectancy aspect and the total value of DPi is contributed by the correlations of all DPi items that are adequate. Thus, it becomes clear that all the items in DPi measure the expectancy aspect according to TMT.

In Figure 2, it can be seen that the correlations between all DPi items and expectancy aspect of TMt are negative. These results indicate that an increase in DPi score is inversely proportional with expectancy score. The higher the score obtained in DPi measuring instrument, the lower the score obtained in the TMt expectancy aspect. This finding indicates that individuals who procrastinate in making decisions are individuals who have low expectancy and confidence (self-efficacy) in completing tasks. In the end, the result obtained in this study is consistent with the meta-analysis of Steel (2007) in which the correlation between procastination with self-efficacy is negative.

In the other two aspects of TMt, the value and impulsiveness, adequate correlation was found only on particular items. In the value aspect, DPi items that are adequately correlated with are item three and item five, while on the impulsiveness aspect, item three and item four are adequately correlated. These correlated items are the one that contribute to the adequate correlation value between total DPi score with value and impulsiveness aspects.

Item three and item five on DPi instrument has a positive correlation with the value aspect of TMt (Figure 2), that means that the higher the score of item three and item five (DPi), the higher the score of the value aspect of TMt. But it is important to remember that items that measure the value aspect of TMt are unfavourable (Steel, 2011). In his meta-analysis, Steel (2007) explains that the value aspect of the TMT is measured through three components, namely the task aversiveness, need for achievement, and boredom proneness.

According to Steel's explanation, task aversiveness and boredom proneness have positive correlations to procrastination, which mean that the higher the person's procrastination, the higher the score on the two components. Based on these explanations, researcher assumed that the unfavourable items in the TMt do not measure value aspect, but the two components that make up the value aspect, which are task aversiveness and boredom proneness. Task aversiveness is a tendency to avoid tasks that are found to be unpleasant, while boredom proneness mean how boring a job to do (Steel, 2007).

One example is item two in the TMt instrument, "The work that is not interesting, make me fail." In that item it can be seen that the individual considers his work to be not interesting so that he/she avoids doing it (task aversiveness). Another example is item five in the TMt instrument, "I hope, my work is fun." This item indicates that the person feels or thinks that his/her current job is not fun and hopes that someday he/she will get a more enjoyable job. This item contains the meaning of boredom on the job or the work being done (boredom proneness). Item eleven of TMt instrument (work makes me bored) clearly describes the situation of someone who is bored of his/her current work (boredom proneness).

Based on examples and explanation of these items, it can be concluded that the two DPi items (item 3 and item 5) that correlates adequately with the items of value aspect in the TMt instrument actually measure the two components of value aspect, namely the task aversiveness and boredom proneness. Therefore, it is likely that the two DPi items correlated positively with the items in the value aspect of TMt, because the higher the levels of boredom proneness and task aversiveness of a person, the higher the person's tendency to procrastinate in making decisions.

The last component in TMt which is correlated with DPi is impulsiveness. Steel (2007) explains that an impulsive person tend to act immediately on the matter he/she is thinking about or on the things he/she wants. In addition, they also have less self-control to persist in doing something so they are easily distorted by something else (distractibility).

The items of DPi that were correlated adequately with the impulsiveness aspect of TMt are item three and item four. Item three that read "I spent a lot of time on insignificant matters before getting to the final decision" and item four that read "I put off taking decisions until it is too late", clearly illustrates that the person procrastinate due to distractors in the form of other things that are trivial in nature.

Overall, after DPi was correlated with all other procrastination instruments (PASS, API, and TMt) and other relevant variables (conscientiousness in the IPIP and BF1), the results obtained in this study is in accordance with the results of previous studies. The accordance I argue is the direction and significance of the correlation of the two instruments. Therefore, it can be concluded that DPi has met the psychometric standards as a valid decisional procrastination instrument based on the evidence of relationships with other variables.

Conclusion

Based on the above discussions, it is concluded that DPi instrument has been proven to meet the psycho-metric criteria as a standard instrument (valid and reliable). The psychometric characteristics of DPi obtained from the results of this study proved that DPi also measure one aspect (unidimensional) as the original version of DP instrument (Ferrari, Johnson, & McCown, 1995). Overall, DPi can be used as a standard instru-ment to measure the construct of decisional procrastination.

Limitations

Data was collected by distributing two measuring instruments (DPe and DPi) simultaneously to all subjects. This data collection technique gives chances to subjects to see the answer on the other questionnaire. Although the order of the questionnaires administration was randomized in each subject and the subjects were watched when they were answering it, there was still a possibility for the subjects to commit this misconduct. Some subjects can see the answers from the previous questionnaire (different version) so that the results tend to be good and lead to a high correlation rate.

Suggestions

Various data collection methods can be done in further research. First, researcher can administer the instrument alternately between the English and the Indonesian version. For example, the Indonesian language instrument is given first and then collected, and then the other language instrument is given out. Second, researcher can also give the two instruments (DPe and DPi) on two different days. These two suggestions are made in order to minimize the potential for the subjects to see the answer on the previous instrument.

In addition, the order of items in each instrument can be made different from one another. Thus, inevitably the subjects will read the items one by one. Through this method, researcher may determine if the subjects completed the questionnaires seriously or just copying the pattern of responses from the previous instrument.

The next suggestion is to add questions that are asking the characteristics of the subjects. The purpose is to determine what factors are affecting the subjects' norms categorization as a result of DP instrument measurement. This suggestion is based on the researcher's finding that there is a difference in the levels of decisional procrastination on the male and female subjects. Researcher suspects that other subject characteristics (besides sex) may also affect the results.

Last suggestion is further research needs to be cautious in interpreting the measurement results of DPi instrument. Based on the results of factor analysis of DPi it is known that a single factor can only explain the construct of decisional procrastination up to 49.290% ($x < 50\%$). In

order to gain further understanding of the content, the next research may analyze the content of the items in DPi.

Recommendations

The recommendation that can be given from this study is to use DP instrument in the Indonesian language version to measure the construct of decisional procrastination on subjects with similar characteristics. This reccomendation is based on the result of the research that concludes that DPi instrument (DP in Indonesian language) has met the psychometric criteria as a standard instrument. However, it must be taken into account that the use of DPi as a research instrument must be adapted to local norms.

Researcher assumes that subjects who did not understand or master the foreign language well will certainly have difficulty in working out the instrument in foreign language. Therefore, the measurement of decisional procrastination construct can be done using the instrument in the mother language of the country, which is Indonesian language.

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Appendix follows

Appendix

Validaty Evidence Based on Relation To Other Variables

DPe and DPi: Correlation with PASS I

			total_eng	total_ind	tot_p1
Spearman's rho	total_eng	Correlation Coefficient	1.000	.943"*	.331"*
		Sig. (1-tailed)		.000	.000
		N	112	112	112
	total_ind	Correlation Coefficient	.943"*	1.000	.306"*
		Sig. (1-tailed)	.000		.001
		N	112	112	112
	tot_p1	Correlation Coefficient	.331"*	.306"*	1.000
		Sig. (1-tailed)	.000	.001	
		N	112	112	112

**. Correlation is significant at the .01 level (1-tailed).

DPe and DPi: Correlation with PASS II

			total_eng	total_ind	tot_p2
Spearman's rho	total_eng	Correlation Coefficient	1.000	.943"*	.330"*
		Sig. (1-tailed)		.000	.000
		N	112	112	112
	total_ind	Correlation Coefficient	.943"*	1.000	.317"*
		Sig. (1-tailed)	.000		.001
		N	112	112	112
	tot_p2	Correlation Coefficient	.330"*	.317"*	1.000
		Sig. (1-tailed)	.000	.001	
		N	112	112	112

**. Correlation is significant at the .01 level (1-tailed).

DPe and DPi: Correlation with API

			total_eng	total_ind	tot_api
Spearman's rho	total_eng	Correlation Coefficient	1.000	.943"*	.477"*
		Sig. (1-tailed)		.000	.000
		N	112	112	112
	total_ind	Correlation Coefficient	.943"*	1.000	.425"*
		Sig. (1-tailed)	.000		.000
		N	112	112	112
	tot_api	Correlation Coefficient	.477"*	.425"*	1.000
		Sig. (1-tailed)	.000	.000	
		N	112	112	112

**. Correlation is significant at the .01 level (1-tailed).

DPe and DPi: Correlation with Expectancy Aspect (TMt)

			total_eng	total_ind	tot_eTMt
Spearman's rho	total_eng	Correlation Coefficient	1.000	.943"*	-.288"*
		Sig. (1-tailed)		.000	.001
		N	112	112	112
	total_ind	Correlation Coefficient	.943"*	1.000	-.329"*
		Sig. (1-tailed)	.000		.000
		N	112	112	112
	tot_eTMt	Correlation Coefficient	-.288"*	-.329"*	1.000
		Sig. (1-tailed)	.001	.000	
		N	112	112	112

**. Correlation is significant at the .01 level (1-tailed).

DPe and DPi: Correlation with Value Aspect (TMt)

			total_eng	total_ind	tot_vTMt
Spearman's rho	total_eng	Correlation Coefficient	1.000	.943*	.245*
		Sig. (1-tailed)		.000	.005
		N	112	112	112
	total_ind	Correlation Coefficient	.943*	1.000	.259*
		Sig. (1-tailed)	.000		.003
		N	112	112	112
	tot_vTMt	Correlation Coefficient	.245*	.259*	1.000
		Sig. (1-tailed)	.005	.003	
		N	112	112	112

**. Correlation is significant at the .01 level (1-tailed).

DPe and DPi: Correlation with Impulsiveness Aspect (TMt)

			total_eng	total_ind	tot_iTMt
Spearman's rho	total_eng	Correlation Coefficient	1.000	.943"*	.280"*
		Sig. (2-tailed)		.000	.001
		N	112	112	112
	total_ind	Correlation Coefficient	.943*	1.000	.249"*
		Sig. (2-tailed)	.000		.004
		N	112	112	112
	tot_iTMt	Correlation Coefficient	.280*	.249*	1.000
		Sig. (2-tailed)	.001	.004	
		N	112	112	112

**. Correlation is significant at the .01 level (2-tailed).

DPe and DPi: Correlation with Conscientiousness in IPIP

			total_eng	total_ind	total_cons
Spearman's rho	total_eng	Correlation Coefficient	1.000	.943**	-.441"*
		Sig. (1-tailed)		.000	.000
		N	112	112	112
	total_ind	Correlation Coefficient	.943**	1.000	-.432"*
		Sig. (1-tailed)	.000		.000
		N	112	112	112
	total_cons	Correlation Coefficient	-.441**	-.432**	1.000
		Sig. (1-tailed)	.000	.000	
		N	112	112	112

**. Correlation is significant at the .01 level (1-tailed).

DPe and DPi: Correlation with Conscientiousness in BFI

			tot_bfi	total_eng	total_ind
Spearman's rho	tot_bfi	Correlation Coefficient	1.000	-.259"*	-.260"*
		Sig. (1-tailed)		.003	.003
		N	112	112	112
	total_eng	Correlation Coefficient	-.259"*	1.000	.943"*
		Sig. (1-tailed)	.003		.000
		N	112	112	112
	total_ind	Correlation Coefficient	-.260"*	.943"*	1.000
		Sig. (1-tailed)	.003	.000	
		N	112	112	112

**. Correlation is significant at the .01 level (1-tailed).

Items of DPi: Correlation with TMt

		ind_1	ind_2	ind_3	ind_4	ind_5	tot_eTMt	tot_vTMt	tot_iTMt
Spearman's rho	ind_1 Correlation Coefficient	1.000	.366**	.490**	.400**	.446**	-.240*	.162	.141
	Sig. (2-tailed)		.000	.000	.000	.000	.011	.089	.137
	N	112	112	112	112	112	112	112	112
	ind_2 Correlation Coefficient	.366**	1.000	.282**	.259**	.276**	-.261**	.103	.162
	Sig. (2-tailed)	.000		.003	.006	.003	.005	.278	.087
	N	112	112	112	112	112	112	112	112
	ind_3 Correlation Coefficient	.490**	.282**	1.000	.438**	.641**	-.225*	.246**	.288**
	Sig. (2-tailed)	.000	.003		.000	.000	.017	.009	.002
	N	112	112	112	112	112	112	112	112
	ind_4 Correlation Coefficient	.400**	.259**	.438**	1.000	.382**	-.258**	.132	.190*
	Sig. (2-tailed)	.000	.006	.000		.000	.006	.166	.045
	N	112	112	112	112	112	112	112	112
	ind_5 Correlation Coefficient	.446**	.276**	.641**	.382**	1.000	-.213*	.261**	.103
	Sig. (2-tailed)	.000	.003	.000	.000		.024	.006	.279
	N	112	112	112	112	112	112	112	112
	tot_eTMt Correlation Coefficient	-.240*	-.261**	-.225*	-.258**	-.213*	1.000	-.181	-.193*
	Sig. (2-tailed)	.011	.005	.017	.006	.024		.056	.042
	N	112	112	112	112	112	112	112	112
	tot_vTMt Correlation Coefficient	.162	.103	.246**	.132	.261**	-.181	1.000	.700**
	Sig. (2-tailed)	.089	.278	.009	.166	.006	.056		.000
	N	112	112	112	112	112	112	112	112
	tot_iTMt Correlation Coefficient	.141	.162	.288**	.190*	.103	-.193*	.700**	1.000
	Sig. (2-tailed)	.137	.087	.002	.045	.279	.042	.000	
	N	112	112	112	112	112	112	112	112

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Items of DPe: Correlation with PASS I

		tot_p1	tot_p1a	tot_p1 b	tot_p1 c	ind_1	ind_2	ind_3	ind_4	ind_5
Spearman's rho	tot p1 Correlation Coefficient	1.000	.545**	.774**	.562**	.251**	.168	.166	.244**	.277**
	Sig. (2-tailed)		.000	.000	.000	.008	.077	.080	.010	.003
	N	112	112	112	112	112	112	112	112	112
	tot p1a Correlation Coefficient	.545**	1.000	.490**	-.183	.353**	.212*	.261**	.318**	.375**
	Sig. (2-tailed)	.000		.000	.053	.000	.025	.006	.001	.000
	N	112	112	112	112	112	112	112	112	112
	tot p1b Correlation Coefficient	.774**	.490**	1.000	.140	.250**	.093	.198*	.209*	.167
	Sig. (2-tailed)	.000	.000		.142	.008	.329	.036	.027	.079
	N	112	112	112	112	112	112	112	112	112
	tot p1c Correlation Coefficient	.562**	-.183	.140	1.000	-.065	.046	-.114	-.017	.037
	Sig. (2-tailed)	.000	.053	.142		.494	.633	.231	.858	.698
	N	112	112	112	112	112	112	112	112	112
	ind 1 Correlation Coefficient	.251**	.353**	.250**	-.065	1.000	.366**	.490**	.400**	.446**
	Sig. (2-tailed)	.008	.000	.008	.494		.000	.000	.000	.000
	N	112	112	112	112	112	112	112	112	112
	ind 2 Correlation Coefficient	.168	.212*	.093	.046	.366**	1.000	.282**	.259**	.276**
	Sig. (2-tailed)	.077	.025	.329	.633	.000		.003	.006	.003
	N	112	112	112	112	112	112	112	112	112
	ind 3 Correlation Coefficient	.166	.261**	.198*	-.114	.490**	.282**	1.000	.438**	.641**
	Sig. (2-tailed)	.080	.006	.036	.231	.000	.003		.000	.000
	N	112	112	112	112	112	112	112	112	112
	ind 4 Correlation Coefficient	.244**	.318**	.209*	-.017	.400**	.259**	.438**	1.000	.382**
	Sig. (2-tailed)	.010	.001	.027	.858	.000	.006	.000		.000
	N	112	112	112	112	112	112	112	112	112
	ind 5 Correlation Coefficient	.277**	.375**	.167	.037	.446**	.276**	.641**	.382**	1.000
	Sig. (2-tailed)	.003	.000	.079	.698	.000	.003	.000	.000	
	N	112	112	112	112	112	112	112	112	112

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

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