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Development and Empirical Evaluation of Indecisiveness Scale for Adolescent Students

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Abstract

This study was conducted to develop a valid and reliable indigenous self-report measure of indecisiveness and its empirical evaluation. Sample was consisted of 300 students. The items were constructed on the bases of previous literature and information received by focus groups. The whole Item pool of Indecisiveness Scale was subjected to principal component analyses and two factors were extracted including trait indecisiveness and state indecisiveness. The item total correlation for the items of both factors state Indecisiveness and trait indecisiveness ranged from .50 to .72 ($p < .001$). Reliability analyses proved that over Indecisiveness Scale and both its subscales have excellent alpha reliability. In order to test the construct validity, Indecisiveness Scale and its subscales were correlated with indecisiveness scale by Germeijes and De Boeck (2002).

Keywords: Indecisiveness, state indecisiveness, trait indecisiveness, adolescent students

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Introduction

A common misconception can be observed in past decision related researches that indecisiveness is very rarely occurring phenomena but reality is that, irrespectively its wide prevalence it has been consistently ignored in the past literature and is still poorly understood (Spunt, Rassin, & Epstein, 2009). The present study carried out to bridge this gap. Concept of indecisiveness is complex because various domains of literature defined it in diverse manners. A very comprehensive effort in this regard was made by Germeijs and De Boeck (2002) who defined indecisiveness with multiple descriptors including consuming more time for decision making then need, not having clear understanding of the course of decision making, feeling uncertain during decision making process, feeling difficulty in decision making, deferral and avoidance to make decisions, seeking other's support for decision making, continuously changing the decisions, feeling dissatisfied and stressful after deciding something. These descriptors suggest that indecisive person faces chronic decisional difficulties that appear in individual's internal feelings such as distress as well as in external behavior such as deferring, avoiding and shifting the decisions etc. Crites (1969) explained that indecisiveness is broad term related to almost all decision making situations as the indecisive persons have general problems to make decisions regardless the importance of decisions while decision making difficulties in specific area of life can be defined as indecision.

There are two prominent measures of indecisiveness. The first one was developed by Frost and Shows (1993), based on multiple aspects of indecisiveness including emotions, cognitions and behavior. Although multiple validation studies proved its satisfactory psychometric properties but all were limited to female samples (Germeijs, & de Boeck, 2003). Germeijs and de Boeck (2002) presented indecisiveness as more general phenomena that cover almost all decision related issues. It is not restricted to some specific situations as described by Frost and Shows (1993). In order to eliminate this problem they developed a new scale consisted of 22 items including both positive and negative statements. Although the indecisiveness scale (Germeijs & de Boeck, 2003) is a valid and reliable measure by all sides but it is developed in distinct cultural context that may result certain culture related problems and linguistic hurdles to understand and measure inductiveness. These issues can be addressed by developing indecisiveness scale in Pakistani culture because there is not even a single measure exists to measure the problem of indecisiveness in Pakistani population. So the present study is carried out to construct a reliable and valid measure of indecisiveness among Pakistani population.

Method

The present research consisted of two phases. The phase-I of the present study is based on development of the indecisiveness scale among students. The aims of Study-I are as follows:

Objectives

1. To develop a scale for measuring indecisiveness among students.
2. To analysis the psychometric properties of the scale

Phase-I: Development of the Items

The core objectives of the Part-I was achieved in two phases. Phase I was based on the item development process for the scale measuring indecisiveness. To fulfill this purpose, wide literature review was followed through for understanding the nature and dimensions of indecisiveness that are faced by students. Furthermore information from focused groups was also obtained to get deep insight. Phase I was completed into 2 steps.

Step-II: Examining the nature and dimensions in indecisiveness. In the first step, In-depth literature review was carried out. Literature pertaining the nature of indecisiveness suggested that indecisiveness is two dimensional phenomena and in some people decisiveness is trait based problem that remains stable across life time (Germeijs, Verschueren, & Soenens, 2006).) While in others it can be a state based that is determined by situational determinants. Such as literature suggested that people suffering depression and anxiety have less ability to concentrate and weigh the pros and cones of given situations. Therefore they lose the ability to reach at decisions (Ellis & Ashbrook, 1988).In order to get deeper understanding of the phenomena being studied four focused groups were conducted. Each group consisted of 10 adolescents with the age ranges between 18 to 24 years. Time consumed in each focused group was between 60 to 90 minutes. Ten questions following the Rassin's (2007) psychological theory of indecisiveness and eleven features of indecisiveness identified by Germeijes and de Boeck (2002) were asked from each group and careful note taking was made. All this procedure was completed according the guidelines given by Krueger and Casey (2008). At the end focus group discussion was thoroughly examined.

Step III: Items Writing and the Selection of Rating Scale. In the first step, initial items pool was produced for indecisiveness on the basis of existing literature, especially on the features involved indecisiveness provided by Germeijes and De Boeck (2002), psychological theory of indecisiveness (Rassin, 2007), existing scales and opinions from focused groups. Initially a list of items measuring indecisiveness was created. All the statements were positively worded because less careful responding and errors of measurement are the potential outcomes of negative statements (Merritt, 2012; Sonderen, Sanderman, & Coyne, 2013). The language used for items writing was Urdu. Help from Urdu expert was sorted in order to correct the grammatical mistakes and other linguistics problems in items. In that stage, 5 point Likert-type response pattern scale was selected for the rating of every item because this scaling method is widely used in survey research that provides the opportunity to rate individual on their level of agreement. Moreover it is more likely to produce highly reliable scale through this scaling method (Tittle & Hill, 1967). The scale was named as Indecisiveness Scale.

Step-IV: Selection of the Items for the Final Version of the Scale. In the third step, items were finally selected with the help of a committee. In this way under proper guidance of the experts, all those items were excluded from the scale that was seemed to be unnecessary, ambiguous, and doubled-barrel. Numerous items were rephrased, modified, and merged. The items were finally selected under the guidance of the SME's (Subject Matter Experts). Those items that provided the true picture of the construct under study were retained. A final scale of 105 items was selected in which 53 items were measuring trait indecisiveness and remaining 52 were measuring state indecisiveness.

Phase-II: Empirical evaluation of the Scale

The Phase-II aimed to test the validity and reliability of the Indecisiveness scale.

Sample

This study followed cross-sectional survey research design. In this phase of the study, a sample comprised of students (N = 300) between the age range of 18 to 24 years (M = 20.07, SD =1.69) were selected. Data was collected through purposive sampling technique.

Instruments

Indecisiveness Scale along with Trait and State indecisiveness was used to measure indecisiveness among students. This is self-report measure of indecisiveness developed by Germeijs and de Boeck (2002). This scale is based on 22 items having satisfactory value of alpha reliability coefficient. Scores on the Indecisiveness are used to measure general incisiveness. High scores indicate high indecisiveness and vice versa.

Procedure

Students were approached from different departments of IIUI and university of Sargodha. They were briefly introduced about objectives and importance of the study. Written informed consent was obtained from the participants.

Results

Table 1

Item-total correlation and factor loadings (N = 300)

Sr. No.	Items	Factor 1	Factor 2	*r*
1	1	.58		.51***
2	2	.68		.63***
3	3	.54		.58***
4	4	.47		.56***
5	5	.53		.68***
6	6	.62		.61***
7	7	.54		.65***
8	8	.57		.67***
9	9	.60		.67***
10	10	.46		.50***
11	11	.53		.61***
12	12	.45		.60***
13	13	.56		.66***
14	14	.58		.68***
15	15	.50		.54***
16	16	.60		.59***
17	17	.58		.56***
18	18	.54		.63***
19	19	.55		.66***
20	20	.50		.60***
21	21	.57		.59***
22	22	.59		.64***
23	23	.64		.65***
24	24	.54		.52***
25	25	.53		.53***

26	26	.67		.61***
27	27	.55		.60***
28	28	.50		.60***
29	29	.49		.59***
30	30	.49		.52***
31	31	.48		.52***
32	1		.54	.63***
33	2		.60	.62***
34	3		.65	.68***
35	4		.56	.68***
36	5		.62	.66***
37	6		.52	.68***
38	7		.60	.65***
39	8		.60	.65***
40	9		.57	.66***
41	10		.63	.56***
42	11		.50	.72***
43	12		.54	.59***
44	13		.57	.66***
45	14		.52	.66***
46	15		.56	.50***
47	16		.59	.53***
48	17		.49	.61***
49	18		.68	.56***
50	19		.65	.70***
51	20		.52	.58***
52	21		.53	.61***
53	22		.64	.72***
54	23		.54	.65***
55	24		.68	.66***
56	25		.70	.66***
57	26		.69	.65***
58	27		.67	.64***
59	28		.62	.65***
60	29		.62	.70***
61	30		.47	.60***
62	31		.55	.65***
63	32		.69	.67***
64	33		.65	.61***
Eigen value		14.52	12.35	
Percentage variance		21.67	18.44	
Cumulative percentage		21.67	40.11	

***$p < .001$

In order to analyse the psychometric properties of the Indecisiveness Scale various statistical analyses were computed as descriptive statistics including mean, standard deviation and range for all 105 items. For testing the dimensionality of the Indecisiveness Scale, EFA (Exploratory Factor Analysis) was computed and a principal component solution was obtained. A total of two factors with Eigen values greater than 1.00 were extracted by using varimax rotation. Beside this, numbers of the factors were fixed to 2 on the basis empirical evidences in previous literature during the extraction. The items of the scales were formulated following two dimensions including trait indecisiveness and state indecisiveness. The Eigen values were greater than 1 for both factors and the variance was also greater than 10. Finally, two factors were extracted including trait indecisiveness and state indecisiveness. A criterion given by (Kline, 1993) was followed for the extraction of the items. Thus only those items were retained in final scale that has the factor loadings above 0.30.Factor loadings for state indecisiveness ranged from .45 to .68 and for trait indecisiveness it ranged from .47 to .70 and first factor "state indecisiveness retained 31 items while second factor "trait indecisiveness" retained 33 items. All items of the scale were submitted to item-total correlation for further validation. While computing the solutions only those items were retained which possessed correlation coefficient of greater than .30 as suggested by criterion given by Nunnally and Bernstein (1994). The coefficients of the item-total correlation were greater than .30 on all the items of Indecisiveness scale (.50 to .72, $p < .001$) that showed satisfactory level of homogeneity of the items with the underlying constructs.

Table 2

Descriptive statistics, skewness, kurtosis and Pearson correlation (N = 300)

Sr	IS	α	*M*	*SD*	Ranks	Range	Skew-ness	Kur-tosis	1	2	3	4
1	State Indecisiveness	.94	99.15	21.39	1st	37-143	-.67	.24	-	.69***	.93***	.16**
2	Trait Indecisiveness	.95	88.44	24.59	2nd	34-149	.02	-.33		-	.90***	.21***
3	Total	.96	187.60	42.29		73-284	-.27	-.05			-	.20***
4	Indecisiveness scales	.20	67.90	5.69		43-83	-.32	1.64				-

Note. IS = Indecisiveness Scale ; %V = Percentage of variance; C% = Cumulative percentage; **p<.01, ***p<.001

Alpha reliability coefficients for the Indecisiveness Scale were computed as .94, .95 and .96 State Indecisiveness, Trait Indecisiveness and overall scale respectively that shows satisfactory internal consistency for total scale as well as subscales of Indecisiveness Scale. In order to test the univariate normality, skewness and kurtosis were computed. Indecisiveness Scale and all subscales, the values of Skewness and kurtosis were less than 2 indicating that data was not affected by Skewness and pointiness. Pearson correlation was employed to examine relationship between subscales of Indecisiveness Scale. Trait Indecisiveness has significant positive relationship with state indecisiveness (r = .69, p < .001) and overall scale (r =.93, p < .001). State indecisiveness has significant positive correlation with overall scale (r = .90, p < .001). In order to test the construct validity related issues, Indecisiveness Scale and its subscales were correlated with indecisiveness scale (IS) by Germeijes and De Boeck (2002). Results show that both State Indecisiveness (r = .21, p < .001) and Trait Indecisiveness (r = .16, p < .01) have significant positive correlation with Indecisiveness Scale. In the same way overall State Trait indecisiveness have significant positive correlation with Indecisive scale (r =.20, p < .001)

Discussion

Concept of indecisiveness has been remained complex because various domains of literature defined it in diverse manners. Indecisiveness is considered as delaying indecision or putting of decision in literature dealing with procrastination (Effert, & Ferrari, 1989), difficulty to make general decisions according to vocational literature (Cooper, Fuqua, & Hartman, 1984), appears as a manifestation of some clinical disorders in clinical literature (American Psychiatric Association, 2000). Seemingly all conceptualizations of indecisiveness are similar to some extent but operationally these are mainly distinct and literature regarding decision making provided very little empirical attention toward indecisiveness (Bargh & Chartrand, 1999). Another main issue with the conceptualization of indecisiveness is that previous studies regarding indecisiveness have measured indecisiveness with incongruent measures that failed to explore its diverse mechanisms (Potworowski, 2010). Moreover some researchers claimed it is uni-dimensional construct (Frost & Shows, 1993) while others reported it multidimensional (Spunt, Rassin& Epstein, 2009).So the first and foremost aim of the present study is to provide conceptual clarification of indecisiveness. In order to fulfill that purpose literature regarding the dimensionality of indecisiveness and its related mechanisms were examined following definition was synthesized.

"Indecisiveness is characterized by dispositional, situational and overall decision inability in all three steps of decision making including before, during and after a decision"

Thus keeping in view this definition of indecisiveness, development and empirical evaluation of the scale measuring indecisiveness was carried out in indigenous culture. In order to gain theoretical support descriptors of indecisiveness by Germeijs and De Boeck (2002) and psychological theory of indecisiveness (Rassin, 2007) were followed. Furthermore more broad aspects of indecisiveness were also identified by examining extensive literature review and obtaining the information from four focused groups consisting of 40 adolescents.

Literature review and opinion from focus group participants revealed that indecisiveness has two dimensions trait and state indecisiveness. It is suggested that there is not even a single measure that includes these faces of indecisiveness (Van Matre & Cooper, 1984). Indecisiveness is a "trait of having difficulty making decisions" and "state of being undecided" (Van Matre & Cooper, 1984, p, 16). There are strong theoretical bases behind this concept that indecisiveness is trait and just like other personality traits it possesses stable pattern that does not change across times. On the other hand another explanation is also available that indecisiveness is state which is characterized by chronic disability to make decisions and determined by negative mood states and certain situational factors such as time pressure and importance of decisions, lack of information etc (Mojgan et al., 2011; Rassin, 2007). Studies suggested that these factors decrease the ability to concentrate and weigh the pros and cones of given situations (Campagna & Curtis, 2007). Although existing measures of indecisiveness includes such items that provide the glimpse of both trait and state indecisiveness but none of them distinguish between these aspects. On the bases of existing evidences present study defined trait indecisiveness as "a type of indecisiveness which is characterized by dispositional decision inability in all three steps of decision making including before, during and after a decision" and state indecisiveness as "a type of indecisiveness which is characterized by situational decision inability in all three steps of decision making including before, during and after a decision".

After identification of all possible features and aspects of indecisiveness a scale consisting of 64 items was developed which included 31 items for measuring state indecisiveness and 34 items for measuring trait indecisiveness. In line with the proposed definition of indecisiveness in present study items covered all facets of indecisiveness that appear before, during and after decision making as suggested by

Potworowski (2010) that indecisiveness can occur in any phase of decision making including phase of awareness regarding the need of decision making, commitment phase, implementation phase and post completion phase. All this process was completed under the light of the worthy suggestions of subject matter experts.

Indecisiveness scale proved to be a valid measure because of having sound evidences. All empirical and theoretical literature was studied for item generation. Opinions from focus groups were also incorporated. Items were examined by subject matter experts to ensure that whether they were appropriate with the construct under study or not.

After item generation data was collected from 300 students with the age ranges between18 to 24 years. Researchers illustrated that indecisiveness is more prevalent problem among students of this age as compared to any other age group (Halpren-Felsher & Cauffman, 2001). Therefore sample was comprised of adolescents. Multiple statistical analyses were applied on data to compute the reliability and validity of the scale under construction. Exploratory Factor Analyses (EFA) was employed to establish the factorial validity. In line with the expectations, factor analysis categorized the items into two unique categories of indecisiveness. The item loading was satisfactory because it was in line with the Kline's criterion that suggests it must be greater than .30. Both two factors explained 21.67% of total variance. In order to ensure whether items in the scale are homogeneous are not item total correlation was also computed. All 64 items of Indecisiveness Scale showed correlation coefficient greater than .50 which illustrated strong association of items with the overall scale (Nunnally& Bernstein, 1994).

Along with factorial validity construct validity was also established. For this purpose the correlation coefficient for the present Indecisiveness Scale and Indecisiveness Scale (Germeijs & De Boeck, 2002) was computed. Finding proved the construct validity of Indecisiveness Scale because it has significant positive correlation with Indecisiveness Scale. Not only overall scale but its subscales including trait indecisiveness and state indecisiveness also have positive correlation with Indecisiveness Scale. Further support for construct validity was also obtained by computing the correlation between both subscales of indecisiveness including state indecisiveness and trait indecisiveness. Positive relationship between both subscales of indecisiveness confirmed the strong construct validity of the Indecisiveness Scale.

In the next step, alpha reliability coefficient was computed for testing internal consistency. Alpha reliability coefficient for Trait indecisiveness was .95, for State Indecisiveness was .94, and for overall scale was .96. The values of reliability coefficients proved satisfactory internal consistency for all subscales and overall Trait-State Indecisiveness Scale. The value of reliability coefficient greater than .9 is consider as excellent (George & Mallery, 2003).

In order to address the concerns related to univariate normality value of skewness and kurtosis for both subscales and overall scale were calculated. In current study for both subscales and overall scale of indecisiveness the value of skewness and kurtosis was less than +1 and -1 that is ideal for symmetrical normal distribution (Brown, 1996). So it is concluded that univariate normality is not problematic in the existing scale.

At the end both type of indecisiveness including state indecisiveness and trait were ranked by following their mean scores. Mean Score were 99.15 and 88.44 for state indecisiveness and trait indecisiveness respectively that indicated that adolescent in indigenous culture suffer more the problem of state indecisiveness as compared to trait indecisiveness. Previous literature also supported this notion that decision making difficulty determined by situational factor such as negative mood state is more prominent among adolescents (Campagna, & Curtis, 2007).

Implications

The present study is an insightful to comprehend the concept of indecisiveness and have considerable contribution in theoretical as well applied term. At theoretical perspective this study is a unique effort to conceptualized indecisiveness with reference totrait-state dimensions. The definition of indecisiveness synthesized in present study not only grasps the multidimensionality but also possesses the idea that indecisiveness can occur in any stage within the course of decision making such as before, during and after decision making. Although number of definitions related to indecisiveness exists but the present study provides a very comprehensive definition which grasps the consistent trait based and situational state based indecisiveness.

At operational level this study provides a valid and reliable measure of indecisiveness that comprehends the notions of state indecisiveness and trait indecisiveness at very first time. Rassin (2007) stated that these two dimensions always have been ignored in past researches dealing with indecisiveness. Factor analysis proved that both of these factors are included in indecisiveness and both subscales have satisfactory reliability and validity evidences. The present study is an initiative because no measure is available to measure this construct in indigenous context and trait-state distinction in the overall literature on indecisiveness.

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