

Determining Psychometric Properties of New Active Procrastination Scale and Passive Procrastination Scale **(Running Head: "psychometric properties of NAPS and PPS)**

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Article History: Received: 13 Jan 2019 Accepted: 17 Oct 2019	ABSTRACT The study was planned to determine the psychometric properties of New Active Procrastination Scale and Passive Procrastination Scale. The phenomenon of procrastination has not been extensively explored in Pakistani setting. Most of the available scales in local setting focused on negative aspect of procrastination so as there was a need to have a sound measure to assess level and type of procrastination. Overall 80 adolescents selected through convenient sampling approach participated in study. Findings revealed high internal consistency of NAPS and PPS and also substantiated the theoretically predicted relationship of NAPS and PPS with other variables. Study not only highlighted the significance of the construct and measures but also discussed the potential limitations and future recommendations of the study. Key Words: active procrastination, passive procrastination, reliability, construct validation, adolescents
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1. Introduction

Procrastination has been viewed as delay in behavior or delay in decision making. The phenomenon of procrastination has existed throughout the history but with industrial revolution the term gained popularity as people have number of commitments and deadlines to meet. Procrastination is generally viewed in negative context but Chu and Choi (2005) forwarded a new perspective known as active and passive procrastination. They viewed that not all delays lead to negative consequences rather some delays are intentional and functional such as active procrastination. The concept of active procrastination is quite

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nascent and needs to be explored extensively. General population including students are negatively influenced in case of passive procrastination. With reference to Pakistan there is dearth of research focusing on procrastination and its consequences in daily life, academic and work setting. In a study by Aziz and Tariq (manuscript submitted for publication) an effort was done to find a measure that can explore the phenomenon in both positive and negative dimensions. Their study focused on translation, adaptation and cross language validation of New Active Procrastination Scale and Passive Procrastination Scale. Findings of their study indicated that translated versions of both NAPS and PPS had test-retest reliability of .90 and .86 respectively.

Present study is planned to determine the psychometric properties of Urdu translated versions of NAPS and PPS for use in indigenous context. So, the psychometric properties in terms of reliability and validity of the Urdu version of NAPS and PPS was determined. To ensure that the scale is a coherent and reliable measure of a construct it should have a sound internal consistency (Chen et al., 2004). As reliability indicates the degree to which the scale scores are free from measurement error, it is considered a basic requirement of a sound measure (Hinkin, 1998). For present research the minimum acceptable Cronbach alpha level was decided as .50 as according to Kline (2000) alpha below this level is unacceptable for psychological researches.

Construct validity, the extent to which the test assesses a theoretical construct or trait and its relationship with operationalization or measure so, keeping in view the purpose behind validating a scale is to see the extent to which operationalization of a construct are consistent with the theoretical expectations (Chen et al., 2004). The process of construct validation entails the gradual accumulation of information from multiple sources and any data illuminating the nature of trait and its manifestations provides evidence for the validation (Anastasi & Urbina, 1997). It is always desirable to validate the translated scale before using in a new context with cultural variation to enhance its validity. Therefore, present study deals with validating the translated scales of NAPS and PPS. To meet the objective of providing empirical evidence for validation of measures, internal

consistency through Cronbach alpha and construct validation via convergent and discriminant validity was determined. Time Management Behavior Scale (Macan et al., 1990; Akhtar, 2005-U) and Satisfaction with Life Scale (Diener et al., 1985; Zahid, 2002-U) were used for above mentioned purpose.

Procrastination has been frequently studied in negative connotations (Ferrari, 2001). A new form of procrastination known as active procrastination was introduced by Chu and Choi (2005) that has associated positive outcomes for individuals such as high self-efficacy, use of positive coping strategies, better performance and low level of depression, anxiety, and stress. Active procrastinators keep themselves free from a fixed time schedule and rigid time structure by shifting their attention from routine schedules to effective accomplishment of the goal. Active procrastinators are less vulnerable to stress and take more effective steps to manage work related pressures that in turn leads to better performance and high level of life satisfaction.

To demonstrate the convergent and discriminant validity of NAPS and PPS it was proposed that active and passive procrastination are two distinct types of procrastination characterized by their different attributes such as time control and outcomes of their behavior. As an evidence of convergent validity, it was presumed that active procrastination will be positively related to purposeful usage of time in terms of time management and time control and will be negatively related to time structure. As active procrastinators have preference for time pressure, so they frequently postpone and reprioritize their activities because they have less rigid time conceptions and are more sensitive regarding their use of time and goals that gives them a greater liberty of action and more sense of time control. Macan (1994) noted that those who prefer having to-do lists and strictly adhere to their rigid schedules perceive less control over their time. So, it was proposed that traditional or passive procrastinators perceive less control over their time and prefer to adhere to their rigid schedule. Findings of Wolters, Won, and Hussain (2017) concluded that academic time management is a key element of self-regulated learning and

provide a better understanding of college student procrastination while engaged in academic activities.

Another defining feature of active procrastinators is cognitive decision to procrastinate. Since active procrastinators had high perception of time control so they intentionally postpone their activities and reprioritize their schedules. Therefore, instead of being fixated to the routine, they deliberately resettle their plans in response to varying external demands (Chu & Choi, 2005). On the other hand, traditional or passive procrastinators are less likely to procrastinate intentionally. Further it was assumed as active procrastinators are well capable of motivating them under taxing conditions, making intentional decisions to procrastinate, and timely task completion, as a result they experience positive outcomes such as more satisfaction with their lives despite their procrastination while passive procrastination is marked by, an inability to focus on the task and to drift down to the activities which are more enjoyable than the task itself (Tice & Baumeister, 1997). Passive procrastinators go for immediate fulfillment of their desires and gratification of pleasures which alleviate stress in the shorter run but in longer run they experience low level of life satisfaction (Harriott & Ferrari, 1996; Knaus, 2000). Abdullah (2017) while exploring the procrastination and its relationship with mental health among children and adolescents found that adolescents procrastinate significantly more than children and noted a significant negative correlation between procrastination and trusts in one's self and others, freedom of winless, perception of reality and objects, love of the self/ others, and straightness. Considering the distinct personality characteristics an orthogonal nature of relationship was expected between active and passive procrastination. Seo (2013) substantiated the idea that, active procrastination is likely to be related to relatively autonomous forms of motivation, and form of delay that might be distinct from passive procrastination.

2. Materials and Methods

2.1 Sample

With an objective to have an insight regarding the usefulness of scales and establishing psychometric properties in local context it was decided to determine sample size for the study through G-Power analysis. To estimate Pearson product moment correlation ($r = 0.3$) of N observations, 5% level of significance ($\alpha = 0.05$) with 80% power ($\beta = 0.2$), the required sample size was approximately 80. So, the scales were administered to a sample of 80 late adolescents who were approached through convenient sampling (52 girls and 28 boys: Mage = 20.23 years: SD = 1.31: age range = 17-22 years). Response rate for the study was 100 percent. Education level of participants ranged from first to fourth year of college.

2.2 Instruments

New Active Procrastination Scale: New Active Procrastination Scale was developed on the basis of 12-item measure of Active Procrastination Scale (Chu & Choi, 2005). For the development of NAPS a new expanded scale comprising of 40 items was constructed. Choi and Moran (2009) examined the content coverage and face validity of all the items in pilot-testing of the scale and on the basis of feedback from ten undergraduate students. Slight modifications were incorporated in the scale after running a series of EFA's that resulted in a balanced representation of the four underlying dimensions of active procrastination. New Active Procrastination Scale is in a Likert-type format. It uses 7-point scale as a response format for all the items ranging from 1 (not at all true) to 7 (very true). There are four dimensions measured through NAPS; outcome satisfaction, preference for pressure intentional decision to procrastinate, and ability to meet deadlines. Scoring of all the items is in reversed form except items no. 9, 10, 11, and 12. The score range of total NAPS lies in 16 to 112 and for each dimension it ranged from 4 to 28. Cronbach's alpha coefficient of scales assessing the four dimensions lie between .70 and .83 providing support of acceptable internal consistency whereas alpha coefficient

for total NAPS (.80) was also satisfactory. Urdu translation of NAPS (Aziz & Tariq, 2018) was used in present study. Alpha reliability coefficient of Urdu version of NAPS total was .82 (N = 80) and it ranged from .55 to .88 for four dimensions of the scale.

Passive Procrastination Scale: Passive Procrastination Scale was adopted by Chu and Choi (2005) to assess the level of traditional/passive procrastination. It comprises of six items belonging from two already existing measures of procrastination “Decisional Procrastination Scale” (Mann, 1982, as cited in Ferrari et al., 1995; Schouwenburg & Lay, 1995) and “Academic Procrastination: Theoretical Notions, Measurement, and Research,” as cited in Ferrari et al. (1995). The alpha reliability of the English version of the scale was .82. It is a 7-point scale in a Likert type format. It offers response categories ranging from 1 “not at all true” to 7 “very much true”. All items are positively scored except item no. 1 which is scored in a reverse manner. To get a total score of an individual on passive procrastination, scores on all the items are summed up. The score ranges from 6 to 42. Urdu translation of PPS which was completed through process of decentering and forward and back translation (Groves, 2007; McGorry, 2000) was used in this research. Alpha reliability coefficient of Urdu version of PPS is .75 (N = 80) which is reasonably satisfactory

Time Management Behavior Scale: Time management behavior scale was originally developed by Macan et al. (1990) and was translated by Akhtar (2005). The scale assesses time management behavior of students. It is a 5-point scale comprising on 34 statements (1 = never true and 5 = always true). It has four subscales: setting goals and priorities, mechanics of time control, preference for organization, and perceived control of time. The possible score range of TMBS is 34 to 170. Alpha reliability of TMBS is .60 and for subscales it ranges from .60 to .83 (Macan et al., 1990). For present study Urdu version of TMBS was used to study the time management behavior of adolescents.

Satisfaction with Life Scale: For validation of NAPS and PPS Satisfaction with Life Scale (Diener et al., 1985) was also used. SWLS is a measure of global life satisfaction. It is a short and reliable instrument. SWLS measures satisfaction in five domains such as,

living situation, social relationships, work, self, and present life. The scale comprises five statements and is in Likert type format with 5-point response options (1 = strongly disagree and 5 = strongly agree). A total life satisfaction score is obtained by summing the responses on all the items. Score of SWLS ranges from 5-25. Low score indicates low level of life satisfaction and high score indicates high level of life satisfaction. The scale had sufficient alpha reliability (i.e., .87) and with two months interval it was .82. The Cronbach's alpha coefficient for SWLS based on the responses of the Asian respondents was found .92. (Diener et al., 1985). For present research Urdu version of the SWLS (Zahid, 2002) was used.

2.3 Procedure

For this part of the research respondents were personally approached by the researcher in their respective institutions and were requested to participate in the study. They belonged to different educational institutions of Islamabad and Rawalpindi such as Govt. Post Graduate College (W), 6th road, Rawalpindi; F. G. Boys Higher Secondary School, No. 15, Islamabad. After having their consent, they were given a set of questionnaires including demographic information, NAPS, PPS, TMBS, and SWLS. They were given some general instructions regarding how to respond on questionnaires. Then the specific instructions pertaining to each questionnaire were also made clear to them. They were requested to read each statement carefully and select the appropriate response option that they think well represents them. Any query by the respondent regarding the comprehension of words/statements in the scales was satiated by the researcher. After getting the filled-out questionnaires, respondents were thanked for their voluntary participation in the research.

4. Results

For the purpose of determining the reliability and validity of Urdu versions of NAPS and PPS following statistical analysis were run.

1. Cronbach's Alpha Coefficient
2. Item Total Correlation
3. Correlation Coefficient (for convergent and discriminant validity)

Cronbach's Alpha Coefficient. To determine the internal consistency of all the measures, Cronbach's alpha coefficient was computed. Results show the alpha reliability coefficient of NAPS and PPS which is considerably high (i.e., .82 and .75 respectively). Alpha for four dimensions of NAPS ranges from .55 to .88 which indicates that it is a reliable measure for assessing the level of active procrastination in Pakistani sample. The other scales such as Time Management Behavior Scale and Satisfaction With life Scale used for purpose of validation of NAPS and PPS were also found to have sufficient reliability with this sample. Alpha for TMBS ranges from .64 to .81 and for SWLS it was .90.

Item-Total Correlation of Scales. Item total correlation is an indication of the internal consistency of the scale. For this purpose, all the items of the scales were correlated with their respective total scale scores. Findings revealed that all the items were positively correlated with their total scores on the respective scales. The value of item total correlation of NAPS ranges from .40 to .96 ($p < .05$ and $p < .01$), for PPS the range was .78 to .93. Similarly, item total correlation of TMBS ranged from .26 to .89 ($p < .05$ and $p < .01$) and for SWLS it was .69 to .91 ($p < .01$). Item total correlation of scales showed the sound internal consistency of all the scales.

Validation of New Active Procrastination Scale and Passive Procrastination Scale. The validation of Urdu version of NAPS and PPS was determined by providing the empirical evidence related to convergent and discriminant validity of the instruments. Convergent validity refers the extent to which a measure correlates with the other indicators of the construct because they are all converging on the same thing (Mitchell & Jolley, 2001). TMBS and SWLS were used for establishing the convergent and discriminant validity of the scales. The scores on New Active Procrastination Scale and Passive

Procrastination Scale were correlated to scores on TMBS, and SWLS as an evidence of convergent and discriminant validity.

Regarding the convergent validity of NAPS and PPS, which is the extent to which scale scores should correlate with other measures with which it should theoretically correlate, and for discriminant validity, it is the extent to which scale scores should not correlate with other measures it should theoretically not correlate, was examined. It was expected that active and passive procrastination are two entirely different constructs so theoretically they should not correlate and their pattern of relationship with other variables will also be different from each other. It was likely that NAPS and PPS scores will not correlate with each other as an indicator of discriminant validity. The relationship pattern of both the constructs with other variables will also be different such as, NAPS scores will correlate positively to time management and time control subscales of TMBS and will be negatively related to setting goals/priorities and organization. In addition, NAPS scores will positively correlate to SWLS as an index of convergent validity. Regarding PPS scores, negative correlation with time management, time control, and positive correlation with setting goals/priorities, and organization subscale of TMBS will be an indicator of discriminant validity. Moreover, a negative correlation of PPS with SWLS will indicate the discriminant validity of the scale construct.

Findings of Table 1 revealed that NAPS total and its four dimensions scores positively correlated with TMBS, and SWLS which indicated the convergent validity of the scale. No significant correlation was observed between NAPS and its four dimensions with PPS which showed the existence of discriminant validity. Regarding Passive Procrastination Scale significant negative correlation was observed with only SWLS. The relationship pattern of NAPS and PPS with time management and life satisfaction indicates the distinct nature of both types of procrastination marked with specific features.

Table 1*Correlation of NAPS and its Factors with PPS, TMBS, and SWLS (N = 80)*

Scales	1	2	3	4	5	6	7	8
1. NAPS	-	-	-	-	-.	-	-	-
2. OS	.96**	-	-	-	-	-	-	-
3. PP	.91**	.82**	-	-	-	-	-	-
4. ID	.98**	.95**	.90**	-	-	-	-	-
5. AD	.95**	.90**	.82**	.89**	-	-	-	-
6. PPS	.03	-.05	.04	.02	.02	-	-	-
7. TMBS	.29**	.28**	.29**	.27**	.24*	-.02	-	-
8. SWLS	.68**	.68**	.78**	.58**	.76**	-.13**	.22**	-

Note. NAPS= New Active Procrastination Scale; OS=Outcome Satisfaction; ID=Intentional Decision; PP= Preference for Pressure; AD= Ability to meet Deadlines; PPS=Passive Procrastination Scale; TMBS= Time Management Behavior Scale; SWLS= Satisfaction with Life Scale.

* $p < .05$. ** $p < .01$.

To be more specific regarding the characteristic features of active and passive procrastinators in their time management behavior, correlations of NAPS and PPS scores were also computed with subscales of TMBS in Table 2 and Table 3. Findings of Table 2 revealed that there was a significant negative correlation of NAPS with setting goals and priorities and organization subscale of TMBS. On the other hand, significant positive correlation was found between NAPS scores with time control and time management subscales of TMBS indicating that those respondents who report high level of active procrastination are more capable of managing their time and have more perceived time control.

Table 2

Correlation of NAPS with TMBS Subscales (N = 80)

Scales	1	2	3	4	5
1 NAPS	-	-	-.	-	-.
2 GP	-.17**	-	-	-	-
3 TM	.22**	.13**	-	-	-
4 Org	-.19**	.22	.75**	-	-
5 TC	.21**	.14**	.92**	.81**	-

Note. NAPS = New Active Procrastination Scale; GP = Setting Goals and Priorities; TM = Mechanics of Time Management; Org = Preference for organization; TC= Perceived Control of Time.

** $p < .01$.

Results shown in Table 3 revealed significant positive correlation between PPS and setting goals and priorities subscale of TMBS but no significant correlation was observed between PPS and time control, time management and organization subscale. This finding indicates that those respondents who score high on passive procrastination set their goals and priorities in advance yet unable to meet the deadlines.

Table 3

Correlation of PPS with TMBS Subscales (N = 80)

Scales	1	2	3	4	5
1 PPS	-	-	-	-	-
2 GP	.14*	-	-	-	-
3 TM	-.05	.13	-	-	-
4 Org	.12	.22**	.75**	-	-
5 TC	-.03	-.14	.92**	.81**	-

Note. PPS = Passive Procrastination Scale; GP =Setting Goals and Priorities; TM = Mechanics of Time Management; Org = Preference for Organization; TC= Perceived Control of Time.

* $p < .05$. ** $p < .01$.

5. Discussion

The research was carried out to determine the psychometric properties of NAPS and PPS for use in indigenous context. Initially alpha reliability coefficient and item total correlation of scales was determined to check the internal consistency of the translated versions of NAPS and PPS. Results revealed sound internal consistency of the scales. To check the construct validity of the scales, its relation to the existing theoretically relevant measures was explored. For purpose of convergent validity, consistent high correlations between measures designed to assess the same construct or related to that construct is taken as an evidence, and for discriminant validity pattern of divergence such as consistent low correlation between measures supposed to differ is expected (Urbina, 2014). As the target measures (i.e., NAPS and PPS) were already available in Urdu translated form so to keep the uniformity in the language of all the measures, it was decided to use the Urdu translated versions of TMBS and SWLS that are widely used in indigenous context, to determine the convergent and discriminant validity of NAPS and PPS.

To check the theoretically predicted relations of New Active Procrastination Scale and Passive Procrastination Scale with other existing constructs such as, time management and life satisfaction, correlation coefficients were computed. It was found that NAPS scores were not related to passive procrastination indicating active procrastination as a separate construct other than traditional or passive procrastination which further confirms its distinct nature. This finding also supported the previous results found in Chu and Choi (2005) and Choi and Moran's (2009) study of procrastination. Results further indicate that significant positive correlation of active procrastination with time management and life satisfaction. This shows that those who actively procrastinate experience greater life satisfaction have more time management skills. As active procrastinators are more capable of estimating the time in an accurate manner, the minimum amount of time required to complete a task, so they can sustain last minute pressures. This can be attributed to their unique way of dealing with stressful situations (Chu & Choi, 2005). Concerning passive procrastination, a significant negative relationship was found between passive

procrastination and life satisfaction however no significant relationship was observed between overall time management skills and passive procrastination.

In order to determine the relationship of active procrastination and time management skills more precisely, correlation coefficient between NAPS and TMBS subscales was computed. Findings reveal significant negative correlation of active procrastination with setting goals and priorities, and organization subscales of TMBS and significant positive correlation with time management and time control subscales of TMBS. These findings support the previous study of Chu and Choi (2005) and Choi and Moran (2009). As active procrastinators have distinct characteristics, they find themselves capable of managing their affairs timely because of more perceived time control. Due to being capable of managing their routines timely in an effective manner, active procrastinators do not set their goals in a prior manner and are being less organized in this sense because they are flexible in their routine and can mold it accordingly. This further indicates the convergent validity of NAPS as it relates to those subscales of TMBS positively to which it should theoretically relate. Previous study of Wolters et al. (2017) also indicated that time management is a key element in understanding students' academic procrastination. Significant positive correlation between passive procrastination and setting goals and priorities indicated that passive procrastinators set their goals in advance and if they have to shift from their routine schedule, they are unable to manage the things timely, cannot reshuffle their plans according to situational demands. Findings of Waschle et al. (2014) also revealed that high procrastinators were low on goal achievement that in turn reinforce academic procrastination. This was further substantiated by the absence of any significant relationship between passive procrastination, time management, and time control. Pychyl and Flett (2012) and Fernie et al. (2017) had the same view regarding procrastination as a meta-cognitive failure and inability to have self-control. As the research was aimed at determining psychometric properties of the scales, some of the findings are not significant though they are in expected direction like relation of passive

procrastination scale with time management, organization, and time control subscales which may be attributed to small sample size.

Procrastination though being widely studied phenomena yet needs further exploration due to complexity of construct as it entails cognitive, affective and behavioral elements. Previously most of the studies related to procrastination are carried out in West as it was assumed that only technologically advanced societies are afflicted through this menace, but now it is considered an issue for developing countries as well due to globalization and advancement in technology has hardly left any culture not being influenced by others. With reference to Pakistan very few studies have explored the construct of procrastination and most of these have focused only on its negative view. The study paves the way for further explorations pertaining to active procrastination tendencies in general as well as specific population such as students and employees, use of translated measures of active and passive procrastination in indigenous setting, and its implications/outcomes.

6. Limitations

Though findings of the study enhance our understanding of the construct and psychometric properties of measures, yet it is not free from limitations. Small sample size and employing only student population may be a potential limitation. Any future attempt to establish construct validity may employ larger and diverse sample to enhance the validity of the findings. Confirmatory Factor Analysis may also be run to validate the factor structure of NAPS in Pakistani setting. The findings pave the way to use scales in indigenous context and to determine their relationship with other study variables.

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