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Structural Equations Model in Negative Affection, Self- Forgiveness, and Procrastination.

Modelo de Ecuaciones Estructurales en Afecto Negativo, Perdón a uno mismo y Procrastinación.

Shahrooz Nemati ^a<https://orcid.org/0000-0001-6898-9749>Nazila Shojaeian ^b<https://orcid.org/0000-0001-9158-3261>Rahim Badr Gergeri ^aRichard Lynn ^c^a Faculty of Education Sciences and Psychology. University of Tabriz. Tabriz, Iran^b Department of Clinical and Health Psychology. Universitat Autònoma de Barcelona. Barcelona, Spain^c Ulster Institute for Social Research. London, EnglandCorrespondence: Shahrooz Nemati, Sh.Nemati@Tabrizu.ac.ir

Abstract: The current research was conducted to determine the mediating role of negative Affection toward self- forgiveness, and procrastination in male students of the University of Tabriz. Therefore, 361 male students between 18-22 were selected by a random cluster sampling method from three groups of Technical and engineering, basic science and human science faculties. The General Procrastination, Decisional Procrastination, Positive and Negative Affect, and Heartland Forgiveness inventories were used to gather the data. The theoretical model was tested within a structural equation- modelling framework to identify both direct and indirect effects. The results indicate an overall fit model. Although the direct effects of self-forgiveness on decisional and general procrastination behaviours were not significant, thus, an indirect impact of self-forgiveness on the decisional and general procrastination behaviours were fully mediated by negative affection. Also, the effect of self-forgiveness on negative affect and academic procrastination, the training was essential for students.

Keywords: Decisional and general procrastination, negative affection, self-forgiveness, Structural equations model.

Resumen

La investigación actual se llevó a cabo para determinar el papel mediador del afecto negativo hacia el autoperdón y la procrastinación en estudiantes varones de la Universidad de Tabriz. Por lo tanto, 361 estudiantes varones de entre 18 y 22 años fueron seleccionados mediante un método de muestreo aleatorio por conglomerados de tres grupos de facultades de Ingeniería y Técnicas, Ciencias Básicas y Ciencias Humanas. Los inventarios de Procrastinación General, Procrastinación Decisional, Afecto Positivo y Negativo y Heartland Forgiveness se utilizaron para recopilar los datos. El modelo teórico se probó dentro de un marco de modelado de ecuaciones estructurales para identificar los efectos directos e indirectos. Los resultados indican un modelo de ajuste general. Aunque los efectos directos del perdón a uno mismo sobre las conductas decisionales y de procrastinación general no fueron significativos, por lo tanto, un impacto indirecto del perdón a uno mismo sobre las conductas decisionales y de procrastinación general estuvo completamente mediado por el afecto negativo. También, el efecto del perdón a uno mismo sobre el afecto negativo y la procrastinación académica, la formación fue fundamental para los estudiantes.

Palabras clave: Procrastinación decisional y general, afecto negativo, perdón a uno mismo, Modelo de ecuaciones estructurales.

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1. Introduction

Procrastination is considered as a phenomenon of rational thought, to postpone essential tasks unnecessarily until specific a deadline or completed later. It refers to the behavioural tendency to action despite the external adverse outcomes and inevitable negative consequences of such a delay for start and/or completion of decisions or actions [29]. The effects of procrastination often include negative behavioural aspects such as gambling, over-spending, over-eating, sexual promiscuity; it could have resulted from self-regulation failure in the majority of people [1]. People who share procrastination behaviour tend to face at one point or another by ignoring unpleasant tasks. By avoiding unpleasant tasks with effort, self-kindness might increase towards oneself [2]. Indeed, to minimize the risk of making a mistake is a significant category of procrastinating people [3]. Procrastination is considered mostly a way of collecting thoughts to avoid failure in everyday life [4]. By establishing more motivational behaviours than avoidance, less avoidable behaviour is employed [2]. Besides to a positive self-image, which gives personal controlperspective, self-deception straightens out cheats and reveal the cheaters [5]. In terms of precursors of procrastination, the evidence suggests that it is enough lucky to become a chronic habit [6].

Previous evidence suggested that procrastination was significantly related to psychological health factors. At this point, the mental-physical well-being is to seek to play a role to predict the distractibility, self-control, and achievement motivation and organization capacity [7]. Given the forgiveness of situations in psychological disorders like anger, anxiety, depression, and lack of satisfaction in life is accounted with unique variance in these disorders [8] Similarly, higher self-blame sense in the number of individuals who were in the unwanted end of a romantic relationship documented. However, self-blame would provide depression or depressive affection [9]. In addition, numerous studies discussed the traumatically effect of PTSD events (like physical maltreatment, sexual maltreatment, or family-of-origin issues) reduces forgiveness [10-12].

Two theoretical procrastination types employed in the past literatures: 1) Performance: This situation addressed as a conative-behavioural procrastination to postpone and complete the tasks [13], and, 2) Decisional procrastination: The postponing of making timely decisions hold to miss opportunities to reflect on possible corrective actions [14]. Herein, decisional procrastination associated with fears, self-criticism and self-regulated behaviours [5].

Major studies focused on the procrastination that leads to self-defeating and maladaptive behaviours. Indeed, it defined as a self-regulation failure behaviour by self-harming to reach one's goals as a transgression against the self. So, both abuse and over-eating behaviours origin from the self-regulatory failures (as approach behaviours). In such a way, empirical evidence suggested that the self-critics are less autonomous as a mechanism to reduce motivation. By respect to self-critics, the link between self-criticism, rumination and procrastination often mediate by self-criticism impact [15].

As mentioned, procrastination is to ignore the engagement in a specific action taking it as avoidance behaviour. There are essential entails to change avoidance motivation with approach motivation [2]. The reasons why people with a procrastination pattern can harm themselves by irrationally avoiding an intended task in controversial issues. Hence, self-harming behaviour in human life was highlighted with thoughtful and harmful difficulties to postpone tasks/action through various domains [9], while sharing the lack of self-forgiveness to harm themselves. However, self-forgiveness is considered as a crucial step for the motivation process to modify self-punishment to self-acceptance through changing behaviour for the success on doing well in the future, it is an effort to deal with and overcome negative affect such a guilt and shame, fear, anxiety or insecure feelings [9]. To give the same picture, procrastination is addressed to decrease adverse effects and change the behaviour [9]. Consequently, when self-forgiveness increases, procrastination then decreases as a reverse relationship, by reducing negative affect [9].

The *Problem-focused coping strategies* and *emotion-focused coping strategies* are considered as adaptive strategies across forgiveness researches. Thus, the effectiveness of problem-focused coping strategies are in low-control situations, it allows the ventilation of associated emotions which originate from hopelessness and helplessness feelings [16]. Also, the multidimensional construct composed of forgiveness is based on self-forgiveness, other-forgiveness, and difficult situations- Forgiveness [8] have a wide range in emotional, social and cognitive outcomes. To distinguish forgiveness with similar activities (e.g. pardon, condone, excusing, or deny) taking into account the distinction inherent of each definition; hence it defines an individual preferred to reduce avoidance to transgressor to do harm to others and withdrawal from that person [17].

Hall and Fincham [18] reported three fundamental steps of self-forgiveness: At the first step: a person is required to identify the commission of a transgression in contrast to itself and embrace transgression's responsibility. Second step: he (s) must have a sense of guilt or regret, and at the last stage: the person ought to overcome his/her feelings, and in doing so, as previously mentioned; it would be obtainable by changing the motivation experience from self-punishment to self-acceptance [18]. In terms of predictions stem of the Affect Control Theory (ACT) people have different acts based on three primary cores within situations: First; individuals act in such a way that their emotions are appropriate to the situation. Hence, by taking a high negative affection, they might predict unacceptable situations. Second, an inability to express own self in the appropriate emotions, they must justify their perception of the situation. Third, an effort to make conditions to confirm people's sense that they have actually about themselves in present condition [19].

Extending the previous work on the emotional forgiveness component e.g. adverse effects were more prominent within procrastination behaviour [20]. The present research in line with the numerous existing documents plus cognitive- behavioural component of self-forgiveness, adds an emotional element of procrastination as well.

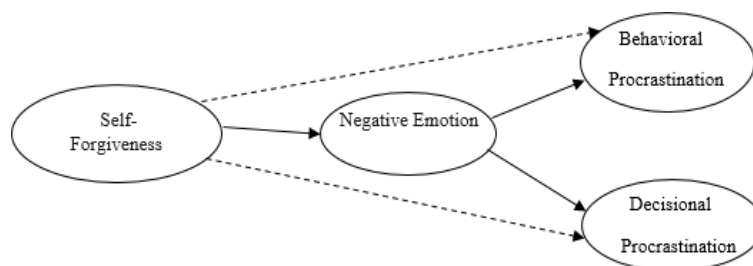
The literature probably evidence that the common prevalence in young people is that about 50% of the students showed procrastination tendencies almost all the time [21]. Such finding reported a higher prevalence in Iranian students, approximately 61% [22]. The students were able to reduce procrastination in exam preparation by replacing approach to avoidance motivation achieved by the beneficial effects in the academic setting as sublease of academic behaviours [2].

2. Objective

The current study bridge is the link between self-forgiveness with procrastination by meditating on negative emotions in this group of students at the University of Tabriz by the following theoretical model. Hereupon, procrastination is these reasons highlight a universal behaviour in the student population, particularly in bachelor students who prepare to apply the crucial duties in various institutes or companies (Figure 1).

The hypothesis of this study was the mediating role of negative emotion in the relationship between self-forgiveness and procrastination in these students.

Figure 1. Relationship between Self-Forgiveness, Negative Affect and Behavioral and Decisional Procrastination in Male Students in University of Tabriz



3. Method

3.1. Participants

Participants were male bachelor students in three faculties at the university of Tabriz include Faculty of Technical Engineering, Literature and Human Science and basic Sciences Faculties. To our knowledge, a total of male students in these three faculties were around 5129. Of this total, 361 students between 18- 22 based on sample size table [23] were selected to participate by stratified random sampling model.

Table 1. Statistical Sampling in Male Bachelor Students of University of Tabriz

Faculty groups	Technical Engineering	basic sciences
Statistical population	3106	951
Sample	216	70

3.2. Procedure

In the beginning information about the number of students in each group and their classes, they were asked to have a permission letter from professors of their faculties (University of Tabriz). Immediately, questionnaires distributed to the students to be completed by providing guidance.

3.3. Measures

General Procrastination Scales; Mann's [27], and reproduced *Ferrari et al.*, [24]: The General Procrastination Scales with a 5-item Likert-type answer to rank each item from one (low) to five (high) measured the procrastination in individuals. It embedded among five other conflict coping patterns in a 20-item inventory. The total score obtained by summing up the responses of the five items. These items included statements "I delay making decisions until it is too late." High ratings indicate a tendency to put off decisions [24]. In a study with Iranian individuals by Hosseini and Khayyer [25], the Cronbach alpha coefficient (.80), and a general factor for the whole scale documented. In addition, Stepwise multiple regression method used for validity and the reliability of Cronbach's alpha was around .83. By removing of eight items from the final version, the indexes for CFI =.93, and RMSEA was .06 [25].

The General Decisional Procrastination (DP) scale; Mann [27]: Decisional procrastination as postponed activities were measured by DP scale. Its content is alike five-item rated on a one (low) to five (high) level. Such "I delay making decisions until it is too late" or "I put off making decisions." High scores showed a

tendency to put off decisions by doing other tasks [24]. In the same study previously done by Hosseini and Khayyer [25], the Cronbach alpha coefficient rate was around .78, and similarly reported a general factor for the whole scale. The indexes of CFI and RMSEA were .95 and .06 respectively; the overall test of fit is found significant.

Positive Affect and Negative Affect Scales (PANAS); Watson, Clark, and Tellegen [26]: The scale comes apart into two segments as the positive (10 items), and negative (10 items) emotions. Indeed, it extends from positive to negative scores that are comprised of 20 items. These scores range for both sets of items from 10 to 50. In a study by Watson, Clark, and Tellegen [26] the internal consistency range for PANAS in positive effect was .86 - .90. Similarly, a range negative effect was about .84 - .87 [26]. In the current study stepwise multiple regression method used to measure validity. In both scales, the fit test was discussed. In addition, the statistic analyse for CFI was .95 and for RMSEA was .03, and the reliability and Cronbach's alpha for both emotion scales were .73 and .76, respectively. When eight items from positive and negative emotion models were eliminated, the statistic model was still significantly fit. These eight items performed statistically well than the PANAS with 20 items.

Heartland Forgiveness Scale (HFS) [8]: The HFS is an 18-item questionnaire to assess each of three facets of forgiveness: forgiveness of self, others, and situations. To score each of these items, write the same number for your score as you wrote for your response, which Forgiveness of Self Subscale (items 1 to 6), Forgiveness of Others Subscale: (items 7 to 12) and Forgiveness of Situations Subscale (items 13 to 18). Respondents used a 7-point Likert-type scale to indicate the degree to which the items described how they typically responded to transgressions (1= Almost Always False of Me, 3= Sometimes False of Me, 5= Sometimes True of Me, and 7= Almost Always True of Me). The correlations between the HFS total, Self, Other, and Situation subscales administered were .83, .72, .73, and .77, respectively [8]. Stepwise multiple regression were obtained through CFI= .98 and RMSEA = .03. After eliminating four items from different components fit test is quite significant. The overall fit of the current model with removed four items was found to be statistically better than the HFS with 18 items.

4. Results

The descriptive statistics of orientation correlation for self-forgiving tendency, decisional-general procrastination and negative affect scales are summarized in Table 1. Furthermore, self-forgiveness has a negative correlation with negative affect ($p < .001$). The comparable data for forgiveness tendency and general decisional procrastination found a negatively significant relationship ($p < .001$) too. Importantly, the higher correlation linked the self- forgiveness and negative affect (-.52). Likewise, linked the decisional procrastinate tendency and negative effect shows to be a significant level (.38).

Table 2. Mean and Standard Deviation Between the variables and correlation of Self-Forgiveness, negative emotion, decisional and general Procrastination

Variables	M	SD	1	2
Self- Forgiveness	24.50	4.96	-	
Negative Emotion	15.45	4.96	-0.526**	
Decisional Procrastination	15.67	4.65	-0.138**	0.278**
General Procrastination	12.03	3.90	0.222**	0.388**

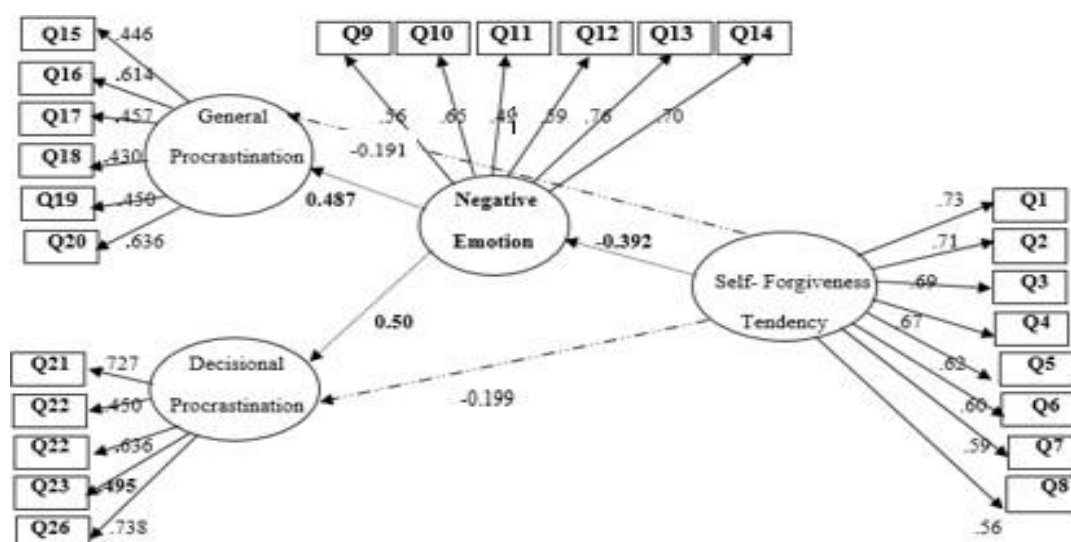
Note. ** $p < 0.001$ * $p < 0.05$

The theoretical model proposed to predict decisional and general procrastination by using AMOS program, and through the structural equation modelling was analysed. In addition, in descriptive analysis chi-squared test (χ^2), Comparative Fit Index (CFI), Akaike information criterion (AIC), and Root Mean Square Error of

Approximation (RMSEA) were implanted for comparative Fit Index in all subsequent analyses. Table 2 presents the significant relative Fit Index. The results showed χ^2 ($p < .001$) significant level. Also, the data analysed for The Root Mean Square Error of Approximation (RMSEA) was equal.05 rate (Values closer less than.05 represent a good fit, and Values over .10 represent not good fit [28]), and for CFI=.95 and TLI=.92 were documented (between.90 to.95 for a good fit). The factor analysis and structural equation models the self- forgiveness tendency, negative emotion, decisional and general procrastination indicate a good fit (See Table 2).

Figure 2 presents decisional and general procrastination, negative affect, and self-forgiveness are latent structures based on our current theoretical model. All latent structures in the model showed high path coefficient. Thus, analysis of these high path coefficients indicated exogenous variables of self-forgiveness ($\beta = .520$) have Standardized canonical coefficients yielded significant to negative affect. On the other hand, there are two indirect effects; one is between self- forgiveness tendency and negative affect ($\beta = -.191$), the other is between self- forgiveness tendency with decisional procrastination by medizing the negative effects ($\beta = -.199$). Similarly, these variables with decisional and general procrastination have a significant indirect affection ($\beta = -.199$). Thus, neither self-forgiveness, decisional and general procrastination were significant predictors in these variables.

Figure 2. *Structural Equation Model after Analyses through Fit Statistics model with our Theoretical Model*



Note. dashed lines = NS (not significant)

5. Discussion

However, it is important to note that the correlation results hold our theoretical model. As results showed significant level to predict decisional and general procrastination. Perhaps not surprisingly because of the full sample size it could not have an exact significant predictor for the statistical population. So, to reduce the effect size of sample group, other interpretations indexes were employed. We did not expect large effects, neither as direct prospective effects.

6. Conclusions

Our research shows the important direct relationship to hold increasing self-forgiveness decisional and behavioural procrastination behaviour (decisional and behavioural procrastination) by decreasing negative

affects as a mediator factor in bachelor degree students. Our hypothesis supported those forgiving tendencies by reducing negative affect, as an indirect effect, is having a significant impact on decisional procrastination behaviour. Furthermore, forgiveness with indirect affectation leads to making timely decisions, and more enough ability and energy to coping with the tasks.

The present study shows that the students with higher self-criticism are unable to forgive their own mistake to promote their feelings positively, which leads to indicate avoidance from procrastination. The students who can forgive themselves (as higher self-forgiving tendency) to behave procrastinate express higher positive emotions. It is inferring to their ability to reduce the negative effect of oneself, and stop punishing own self for poor performance by increasing self-kindness towards oneself. While, in a contradictory relationship, the lower self-forgiving by reaching negative effect, activate unlucky enough to stop procrastinate toward themselves. To continue the negative effect procrastination may fail mood repairing in them.

The role of the forgiveness in physical and psychological health extent by dealing with reducing the negative effect in the current study was aligned with previous documents [7,9]. Self-situations forgiveness has more correlation with various aspects of psychological well-being, and mental health than the other's forgiveness, these findings are consistent with the theoretical model from Thompson, Snyder, et al. [8]. In addition, dispositional forgiveness may be important factor to maintain the health of intimate relationships such a people who have forgiving tend to have longer, more satisfying romantic relationships than people who are comparatively lower in forgiveness [8]. Lack of forgiveness often would predict the higher rates of anger, anxiety, depression, and satisfaction in life [8].

Wide prevalence of procrastination in students would be an important factor to employ psychological motivation factors; like self-forgiveness, which have a significant negative difference with procrastinating behaviour. In terms of psychological treatment for procrastinating, there is highlighted to important reasons why procrastination should be new shedding light on theorists' emphasis to reduce experiencing negative affect, failure in life, and education performance. Thus, experimental results focused on decrease feelings of shame or guilt, because self-criticism and punishing ones own self could reduce procrastination behaviour in students; the initial role of this behaviour is self-indulgent behaviour.

The current study had several limitations, such as limitation in our samples. Only male gender and cross-sectional research, the present study has important implications for the psychological deal with procrastination in male bachelor students. Most importantly, the limitations in generalization, psychological training through the growing aspects of life, utilizing various treatment and methods of applying forgiveness is considerable through counselling and psychotherapy services. Future researches must be explored on the effects of the relationship between self-forgiveness tendency, behavioural and decisional procrastination in other groups of students.

7. Referencias

1. Baumeister RF, & Heatherton TF. Self-regulation failure: An overview. *Psychol Inq* 1996; 7:1, 1-15. doi: 10.1207/s15327965pli0701_1.
2. Wohl MJ, Pychyl T A, & Bennett S H. I forgive myself, now I can study: How self-forgiveness for procrastinating can reduce future procrastination. *Pers Individ Dif*, 2010; 48:7, 803-808. doi: 10.1016/j.paid.2010.01.029.
3. Howell A J, & Watson D C. Procrastination: Associations with achievement goal orientation and learning strategies. *Pers Individ Dif*, 2007; 43:1, 167-178. doi: 10.1016/j.paid.2006.11.017.
4. Sirois F M. Procrastination and counterfactual thinking: Avoiding what might have been. *Br J Soc Psychol*. 2004; 43:2, 269-286. doi: 10.1348/0144666041501660.
5. Wolters CA. Understanding procrastination from a self-regulated learning perspective. *Journal of educational psychology*. 2003 Mar;95(1):179. doi: org/10.1037/0022-0663.95.1.179.
6. Ellis A. and Knaus W.J. Overcoming Procrastination: Or, How to Think and Act Rationally in Spite of Life's Inevitable Hassles. Signet. 1979. [https://www.scirp.org/\(S\(oyulxb452alnt1aej1nfow45\)\)/reference/ReferencesPapers.aspx?ReferenceID=2129382](https://www.scirp.org/(S(oyulxb452alnt1aej1nfow45))/reference/ReferencesPapers.aspx?ReferenceID=2129382).
7. Steel, P. The nature of procrastination: A meta-analytic and theoretical review of quintessential self-regulatory failure. *Psychol Bull*, 2007; 133:1, 65. <https://psycnet.apa.org/doiLanding?doi=10.1037%2F0033-2909.133.1.65>.
8. Thompson, L Y. Snyder, C R, Hoffman L., Michael ST, Rasmussen HN, Billings LS, Heinze L, Neufeld JE, Shorey HS, Roberts JC, Roberts DE. "Dispositional forgiveness of self, others, and situations. *J Pers*. 73, no. 2 ; 2005: 313-360. doi: 10.1111/j.1467-6494.2005.00311.x.
9. Wohl, M. J., DeShea, L., & Wahkinney, R. L. Looking within: Measuring state self-forgiveness and its relationship to psychological well-being. *Can J Behav Scit*, 2008; 40:1, 1. doi:10.1037/0008-400x.40.1.1.1.
10. Najavits, L. M., Weiss, R. D., & Shaw, S. R. The link between substance abuse and posttraumatic stress disorder in women: A research review. *Am J Addict*.1997; 6:4, 273-283. doi: 10.1111/j.1521-0391.1997.tb00408.x.
11. Arévalo, S., Prado, G., & Amaro, H. Spirituality, sense of coherence, and coping responses in women receiving treatment for alcohol and drug addiction. *Eval Program Plann*, 2008; 31:1, 113- 123. doi: 10.1016/j.evalprogplan.2007.05.009.
12. Arslan, G. Psychological maltreatment, forgiveness, mindfulness, and internet addiction among young adults: A study of mediation effect. *Comput Human Behav*. 2017;72, 57-66. doi: 10.1016/j.chb.2017.02.037.
13. McKelvey, R. S., Davies, L. C., Sang, D. L., Pickering, K. R., & Tu, H. C. Problems and competencies reported by parents of Vietnamese children in Hanoi. *J Am Acad Child Adolesc Psychiatry*. 1999;

38: 6, 731-737. doi:10.1097/00004583-199906000-00021.

14. Ferrari, J. R., & Dovidio, J. F. Examining behavioural processes in indecision: Decisional procrastination and decision-making style. *J Res Pers.* 2000; 34:1, 127-137. doi: 10.1006/jrpe.1999.2247.
15. Powers, T. A., Koestner, R., & Zuroff, D. C. Self-criticism, goal motivation, and goal progress. *J Soc Clin Psychol.* 2007; 26: 7, 826-840. doi: 10.1521/jscp.2007.26.7.826.
16. Maltby, J., Macaskill, A., & Gillett, R. The cognitive nature of forgiveness: Using cognitive strategies of primary appraisal and coping to describe the process of forgiving. *J Clin Psychol.* 2007; 63: 6, 555-566. doi: 10.1002/jclp.20367.
17. Macaskill, A. Defining forgiveness: Christian clergy and general population perspectives. *J Pers.* 2005; 73:5, 1237-1266. doi: 10.1111/j.1467-6494.2005.00348.x.
18. Hall, J. H., & Fincham, F. D. Self-forgiveness: The stepchild of forgiveness research. *J Soc Clin Psychol.* 2005; 24: 5, 621-637. doi: 10.1521/jscp.2005.24.5.621.
19. Chebat, J. C., & Slusarczyk, W. How emotions mediate the effects of perceived justice on loyalty in service recovery situations: an empirical study. *J Bus Res.* 2005; 58:5, 664-673. doi: org/10.1016/j.jbusres.2003.09.005.
20. Fee, R. L., & Tangney, J. P. Procrastination: A means of avoiding shame or guilt. *J Soc Behav Pers,* 2000; 15:5, 167. <https://search.proquest.com/docview/1292314443?accountid=15292>.
21. Hill, M. B., Hill, D. A., Chabot, A. E., & Barrall, J. F. A survey of college faculty and student procrastination. *Coll Stud J.* 1978; 12:3, 256-262. <https://psycnet.apa.org/record/1980-12945-001>.
22. Karami, D. "Prevalence of procrastination among university students and its relationship with anxiety and depression. 2009: 25-34. <https://www.sid.ir/en/journal/ViewPaper.aspx?ID=198216>.
23. Chuan CL, Penyelidikan J. Sample size estimation using Krejcie and Morgan and Cohen statistical power analysis: A comparison. *Jurnal Penyelidikan IPBL.* 2006;7(1):78-86.
24. Ferrari JR, Johnson JL, McCown WG. Procrastination and task avoidance: Theory, research, and treatment. Springer Science & Business Media; 1995 Jan 31. [https://books.google.es/books?hl=en&lr=&id=Lu4r0H_wcVcC&oi=fnd&pg=PA1&dq=Ferrari,+J.+R.,+et+al.+\(1995\).+Procrastination+and+task+avoidance:+Theory,+research,+and+treatment,+Springer+Science+%26+Business+Media.&ots=-h0av6ytcW&sig=XJnvactI6CWDtXkawq-m_gtECOI#v=onepage&q&f=false](https://books.google.es/books?hl=en&lr=&id=Lu4r0H_wcVcC&oi=fnd&pg=PA1&dq=Ferrari,+J.+R.,+et+al.+(1995).+Procrastination+and+task+avoidance:+Theory,+research,+and+treatment,+Springer+Science+%26+Business+Media.&ots=-h0av6ytcW&sig=XJnvactI6CWDtXkawq-m_gtECOI#v=onepage&q&f=false).
25. Hosseini, F., & Khayyer, M. Prediction of behavioral and decisional procrastination considering meta-cognition beliefs in university students. *Iranian Journal of Psychiatry and Clinical Psychology.* 2009; 15:3, 265-273. (In Persian). http://ijpcp.iums.ac.ir/browse.php?a_id=825&slc_lang=fa&sid=1&ftxt=1.
26. Watson, D., Clark, L. A., & Tellegen, A. Development and validation of brief measures of positive and negative affect: the PANAS scales. *J Pers Soc Psychol.* 1988; 54:6, 1063. <https://psycnet.apa.org/buy/1988-31508-001>

27. Mann, L. (1982). Decision-making questionnaire. Unpublished manuscript. Flinders University of South Australia, Adelaide, Australia.
28. Hu, L., & Bentler, P. (1995). Evaluating model fit. In R. H. Hoyle (Ed.), Structural equation modeling. Concepts, issues, and applications (pp. 76–99). London: Sage
29. Chowdhury SF. The Construct Validity of Active Procrastination: Is it Procrastination or Purposeful Delay? (Doctoral dissertation, Carleton University).