

Construction and Standardization of the Self-control Scale for Undergraduates

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Abstract: One of the best ways you can take care of your mind as well as your body is to control yourself. This means you will be able to think about things in a productive way, express your emotions appropriately, and act in accordance with your goals over time. In terms of education, self-control is a good predictor of how successful students will be, whether they have positive mental health, if they engage in health-promoting behaviours, or are socially adaptable. The aim of this study was to develop a culture-specific Self Control scale for undergraduate students in India to assist students to deal with the stresses of academics, digital distractions, and self-directed learning. The study employed a descriptive survey research method. A total of 51 items were developed from an initial item pool through the combination of a literature review, review of previous studies, existing tools/scales and expert input. Following expert validation and language refinement, a preliminary version of 42 items was produced. For item analysis, Edward's criterion method was used on a validation sample of 78 undergraduates, and the final draft was formed with 30 items that provided the greatest discrimination. The reliability of the scale was established using test-retest and split-half methods. The test-retest reliability coefficient over a time period of 3 weeks was 0.98, demonstrating excellent stability over time. The split-half reliability coefficient was 0.814, which was a good value for internal reliability, and the result was further corrected using Spearman-Brown's prophecy formula. The following factors contributed to validity: item validity, content validity, expert cross validation with 90% agreement, intrinsic and external cross validation with independent samples, and at various points in time. Norms were created based on 1,200 undergraduate students in Himachal Pradesh. The distributions of the data were found to be nearly normal with skewness and kurtosis values that were deemed acceptable. Norms based on z-scores and varying levels of self-control (very low to very high) were created. The data indicate that the Self-Control Scale is a practical and valid assessment of self-control within the undergraduate population. The tool is beneficial for assessing educational needs and for counselling, interventions, and research within educational contexts.

Keywords: Self-Control, Higher Education Students, Academic Performance, Self-Regulation

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INTRODUCTION

People exhibit self-control when they demonstrate the capability to process and control their emotions, thoughts, and actions within the context of their expectations, societal obligations, and long-term aspirations (Baumeister, 2000; Tangney et al., 2004). For many years, self-control has been studied from multiple viewpoints and this is a testimony of the complexity and multi-faceted nature of the construct. In the early stages of the field, self-control was understood to primarily be the ability to postpone immediate gratification by the use of a number of cognitive and attentional strategies that help the individuals to resist lower order temptations (Mischel, 1974). Subsequently, self-efficacy and self-regulation were believed to act as mechanisms of sustained direction of behaviour aimed at goals (Bandura, 1997; Zimmerman, 2002). One of the most notable among of the such perspectives is the strength or resource model. This model explained self-control as a bounded internal resource that gets depleted with use (Baumeister et al., 1998; Muraven & Baumeister, 2000). Most recently self-control has been characterized as a trait that has a high degree of stability for a considerable period of time but may reverse in a given context (Duckworth & Kern, 2011).

Self-control has prompted researchers to analyse the construct from various methodological perspectives. Trait components are measured using self-report instruments such as the Brief Self-Control Scale for self-control, while state self-control is measured by task performance in a laboratory setting that involves inhibition, attention, and delay of responding. Additional ratings from informants and observational assessments of behaviour offer further richness to the evaluation. More recently, research advocacy for multi-method approaches has grown as the literature suggests that a combination of subjective and objective measures is more effective in predicting outcomes of interest (Duckworth & Kern, 2011; Manapat et al., 2019).

If a 20–25-year-old person is to be considered, such a developmental period is very crucial in a person's life. The responsibilities and autonomy expand greatly for each individual. They have to control and independently manage facilitated learning, financial, social and health control. The transition is from family-oriented control to self-control, and in education, this is particularly challenging. The individual has to bear control and keep attention in task performance, control their emotions to health stressors, sustain health behaviours that support and learning, and manage a good sleep (Pintrich et al., 1991; Zimmerman, 2002).

A great deal of empirical research shows that self-control in young adulthood is predictive of multiple positive outcomes. To be more specific, self-

control is correlated with higher academic achievement, engagement in more honest and less risky behaviours, healthier interpersonal relationships, and greater psychological well-being (Tangney et al., 2004; Duckworth, 2007). By contrast, factors related to low self-control include procrastination, absenteeism, substance abuse, and higher psychological distress, all of which detract from persistence and completion of academic work. Therefore, self-control is a key factor in sustaining educational efforts geared toward improving student retention and performance, and self-care in higher education.

For university students, self-control can be analysed via three related theoretical perspectives: the cognitive-attentional model, the strength model of self-regulation, and self-regulated learning theories. The above models suggest that Self-Control is how individuals are able to regulate their distractibility using a combination of cognitive reframing, attentional control and disengagement. Educationally, this can be accomplished with the development of specific studying methods or routine, formulation of Implementation Intentions and Metacognitive Task Regulation (Gollwitzer, 1999; Zimmerman, 2002). The Strength Model of Self-Regulation (Baumeister et al., 1998; Muraven & Baumeister, 2000) indicates the variance in an individual's control over multiple self-regulatory behaviours and the need for recovery processes. The Self-Regulation of Learning Theory builds upon these concepts and emphasizes Goal Setting, Planning, Self-Monitoring and Self-Evaluation as the primary mechanisms through which Self-Control leads to sustained Academic Achievement (Pintrich et al., 1991).

Better self-control directly correlates with engagement in academics, the ability to persevere with a task, and effective time management. These traits instil abilities for effective studying, distraction avoidance, and maintaining effort on a task for a prolonged time (Duckworth & Kern, 2011). Self-control also shields against the avoidance of academic work by blocking the tendencies to procrastinate, devise a plan and apply strategic coping measures (Steel, 2007; Sirois, 2007). Self-control, in general, is a better predictor of the adoption and maintenance of health-promoting behaviours, like getting enough sleep and properly using/abusing substances, which ultimately leads to better cognition and learning.

Students' self-control is challenged by university's unique socio-demographic environment. Social Influence, Peers, Social Drinking, Romantic Relationships, and Social Belonging all Demands Self-Control (Tangney et al., 2004). Nonetheless, evidence exists that suggests a more self-controlled individual will obtain a more stable, pro-social behavioural tendency, and lesser engagement in aggressive and risky behaviours. Social Self-Regulation (Bandura, 1997), proposes that individual self-control is not solely an individual capacity, rather also about the conditions of normative social expectations and control. Peer Interventions, Cohesive Academic Goals, and Supportive Group Norms (Cialdini & Goldstein, 2004), can reduce the self-regulatory burden

placed on the individual while simultaneously improving self-regulation of the group.

Self-control constitutes an important form of cognitive functioning that affects one's mental health, financial issues, and health management. Greater self-control is linked to lower levels of psychopathology and substance abuse, better coping mechanisms, and higher levels of well-being (Tangney et al., 2004). Longitudinal data show that self-control is a predictor of financial security and rational financial management throughout one's life (Moffitt et al., 2011). The mental health and self-control relationship is, however, bidirectional; low self-control is associated with maladaptive and emotional disorders, while psychological distress and mental disorders may reduce one's self-control (Muraven & Baumeister, 2000).

In the present digital era, students face increasing levels of digital stimulation via smartphones, social media, and constant notifications. There is a growing body of literature that connects poorly regulated digital activities with attention fragmentation, less efficient studying, and negative academic performance (Rosen et al., 2013; Kushlev et al., 2019). These conditions make focused academic study even more difficult and, therefore, increase the level of self-control needed to concentrate on academic activities. Increasingly, modern measures of self-control and the design of self-control training programs incorporate some elements of technology management, such as notification checking, multitasking, and digital self-control apps (López-Angulo et al., 2024).

From an applied perspective, evaluating of self-control has considerable real-world value in higher education. Early detection allows for the targeting of students who would benefit from time management coaching, cognitive behavioural techniques to address procrastination, and training in digital hygiene. On an institutional level, self-control aggregated. Longitudinal evaluation further permits examining mindfulness self-regulation enhancement programs at a greater level. Given self-control is influenced by the environment, some systematic adjustments, such as reduced in-class cell phone usage and the provision of bounded study environments, can circumvent the need to control at the individual level and complement multi-level interventions.

REVIEW OF RELATED LITERATURE

Self-control, as a psychological construct, has become very relevant in education, especially when considering the many cognitive, emotional and behavioural challenges students must cope with. As defined with some breadth, self-control consists of the slowing down of impulses, as well as the directing of attention and behaviour, in the service of goals that take some time to reach. Self-control permits concentration on the task at hand, limits engagement in activities that distract, and facilitates better overall coping (Hofmann et al, 2012). Researchers point out that at the university level students must self-structure their learning, and also regulate their attention away from distractions. This

characteristic is therefore a vital developmental and academic resource (Ariely & Wertenbroch, 2002).

Several studies in the field of education report a positive correlation between students' self-control and their academic performance. For example, in a Galla and Duckworth (2015) longitudinal study, self-control was shown to be a moderator for the maintenance of academic effort and attainment of higher GPA among university students. In a similar fashion, Guo et al. (2020) confirmed that self-control is a significant predictor for academic persistence and lower probabilities of dropping out in first year university students. Various studies report that self-control is positively correlated with time management, effective study habits, and a decrease in procrastination (Steel, 2007; Wolters & Brady, 2021). These relationships demonstrate that self-control is a contributor to academic achievement in an indirect manner, by determining the study behaviour that students exhibit on a daily basis.

University students must cultivate emotional regulatory skills to cope with stress, anxiety, and the demands of transitioning into new roles. Similar to Hamdu and Agustina's (2011) finding, research by Li et al. (2021), indicated that self-control acted as a mediator between academic pressure and psychological wellness. As a result, students with a greater degree of self-control reported less test anxiety and were able to employ more effective stress coping mechanisms. In addition, students who had a greater amount of self-control exhibited a stronger presence of positive emotions and greater levels of life satisfaction due to their engagement in fewer conflicting goal-oriented behaviours (Hofmann, Luhmann et al., 2014). Self-control promotes emotional stability allowing students to engage in academic activities.

The self-control challenges that arise from digital dependency for university students also deserve attention. Research conducted by Rozgonjuk et al. (2018) demonstrated that there existed a positive correlation between self-control and academic performance, as well as a negative correlation between self-control and smartphone addiction. Similarly, research conducted by Jun (2016), revealed that self-control was predictive of less problematic internet usage and greater academic achievement. These issues of digital dependency disrupt the self-regulatory processes that occur in the academic setting as online learning becomes increasingly prevalent (Bergdahl & Nouri, 2020). Therefore, the need exists for self-control systems that assess digital self-regulation in current academic settings.

Research demonstrates that self-discipline positively affects social outcomes as well. According to Vohs et al. (2014), self-control is related to more positive and less conflictual relationships. Milyavskaya et al. (2015) stated that students with self-discipline can more easily implement behaviours congruent with their personal and social values which can result in greater acceptance by their peers and more prosocial actions. The findings mentioned above indicate that self-discipline is important for social adaptation and engagement on the campus.

Higher self-control in university students is manifested by greater participation in activities which promote well-being and functioning at physical and mental levels such as sleeping well and exercising (Oaten and Cheng, 2006). On the other hand, low self-control is associated with alcohol use and other unhealthy lifestyle behaviours (Patock-Peckham and Morgan-Lopez, 2006). Because health behaviours are known to have an impact on attention and mental ability. Self-control must have an impact on academic outcomes through promoting health behaviours.

Self-control has also been placed within broader self-regulation frameworks in Panadero (2017)'s work. Focusing on learning strategies, self-regulated learning (SRL) includes planning, monitoring, and adjusting certain self-control processes, especially on the behavioural level, where, Bembenuity (2011) posits that self-control facilitates the academic delay of gratification where students are able to opt for achieving long-term goals rather than succumbing to immediate pleasures. Moreover, Nota et al. (2015) have shown that numerous students excelling in SRL, self-control, and adaptive behaviours in the academic and career realms had also built flexibility in multi-tasking goals and processes, thereby underlining the importance of combining motivational and strategic components.

Research from different cultures shows that the benefits of self-control can be seen all over the world, although the effects may be less noticeable depending on the educational values and practices of the country. Li and Zhang (2020) determined that self-control is more predictive of role-fulfilment behaviours in college settings within more collectivistic cultures. For instance, in India, Sahu and Rath (2022) demonstrated the self-control of university students predicted academic achievement and psychosocial adjustment, supporting the need for intervention programs that reflect local factors, including large class sizes and high-stakes competitive exams.

Some studies have shown that self-control can be developed during the course of higher education. For example, Hagger et al. (2010) suggested that self-control may be improved through self-regulation practices in a repetitive way, similar to how someone builds muscle. In more applied contexts, educational interventions that teach self-planning and monitoring strategies have shown to improve students' academic performance and persistence (Cleary & Kitsantas, 2017). In self-control studies, mechanisms aimed at improving self-control by removing psychological effort have been shown to improve self-control (Duckworth et al., 2016).

The inability to control oneself has been proven to negatively impact success in one's education, mental state, social life, and physical health, and many researchers have studied this particular phenomenon among students in higher education institutes. Research has proven that assessment tools focused on the unique needs of higher education institutions such as technology use, self-directed learning, and control, are incredibly helpful. Given the continually

advancing systems in education, the self-control of students can be improved and positively impact success and overall mental wellness through the use of structured systems.

Research Gap

While the literature has extensively documented the importance of self-control to academic, emotional, social and health related outcomes among undergraduate students, there are many critical gaps in this literature that have yet to be addressed. The first gap is that most studies of self-control look at it as a general psychological construct, and very few have made an effort to develop context specific measures that are designed to address the unique demands placed upon undergraduate students today—such as the challenges of digital learning environments, pervasive smartphone use, changes in academic demands and increased autonomy. There are few standardized measures that assess digital self-regulation as a core component of self-control for today's learner. The second gap is that although the literature has clearly established a link between self-control and numerous other constructs—such as academic achievement (Galla & Duckworth, 2015; Guo et al., 2020) emotional wellness (Li et al., 2021) social adjustment (Vohs et al., 2014) and healthy lifestyle behaviours (Oaten & Cheng, 2006)—very little empirical research exists that integrates these various constructs into a single comprehensive model of self-control. Most existing self-control tools focus primarily on one or two aspects of self-control, such as impulsivity, delay of gratification or study habits, rather than attempting to capture the multi-dimensional nature of self-control as it manifests itself in higher education settings. The third gap is that most commonly employed self-control tools were developed in Western societies, and therefore raise questions about their potential utility with culturally diverse student populations. While there are some studies that have examined self-control in collectivist cultures, very few have attempted to develop culturally contextualized scales for undergraduate students in India, where the academic pressures, family expectations, and institutional structures differ significantly from those found in Western societies.

Finally, while researchers have identified a number of ways to enhance self-control through intervention, they have lacked standardized tools to evaluate baseline levels of self-control and to measure the outcomes of such interventions in university settings. These further underscores the need for a psychometrically sound, culturally sensitive, and contextually relevant self-control scale tailored specifically to undergraduates. These gaps collectively justify the construction and standardization of a new self-control scale for undergraduates.

3.0 OBJECTIVES:

1. To prepare the initial draft of the self-control scale for Undergraduate students.

2. To conduct item analysis of preliminary draft of self-control scale.
3. To assess the reliability of self-control scale through test-retest as well as split-half method.
4. To determine the validity of the self-control scale for undergraduate students.
5. To determine norms for interpretation of scores obtained on undergraduate student's self-control scale.

4.0 METHODOLOGY

4.1 Research Design

For the construction and standardisation of self-control scale for undergraduates, survey technique under descriptive method of research was employed.

4.2 Sampling

In completing the study, multistage with purposive sampling was used. The sample population consisted of the undergraduate students from the Mandi District of Himachal Pradesh. The first step in the sampling process of the study was the selection of a sample of 100 undergraduate students, which was used for the item analysis of the draft of the self-control scale. The second step in the sampling was the selection of a sample of 78 undergraduate students for the test-retest reliability calculations of the self-control scale. The third step was the purposive sampling of 78 students to determine the split-half reliability index of self-control scale. The last sample was made up of 1,200 undergraduate students to establish norms for the obtained scores in self-control scale.

Planning and Preparation of the Initial Draft of Self-Control Scale for Undergraduate Students

In preparing a self-control scale for undergraduate students, the researcher first considered the relevant literature, self-control inventories, and scale/questionnaires, as well as conversations with experts in the field to determine self-control. A list of 51 items/states (in Hindi) was created, including various statements, and synthesizing opinions from experts, researchers, seasoned practitioners, and teacher educators. Respondents to the scale were to answer using a Likert Method of 5-pointed scale, where 5 represented 'Always' and 1 represented 'Never'. For the positive statements, if a teacher chose "Always", they got 5 points and if they chose "Never", they got 1 point. For the other options, "frequently," "rarely," and "sometimes" received 4, 3, and 2 points, respectively. Negative statements were an exception to the above approach as custom scoring rules were appropriate in that context. Respondents were teachers who, when presented with the negative statements, selected the "Never"

response and received a score as high as five, while those who selected “Always” received a score as low as one. Responses that were in the centre of the scale – “Rarely”, “Sometimes”, and “Frequently” had custom-assigned scores of four, three, and two, respectively, on negative statements. The individual undergraduate student's self-control score was calculated as the sum of the scores for all items.

Editing and Revision of Initial Draft of Self Control Scale

Once the writing process was completed, the self-control scale statements were reviewed and finalized. The first draft composed of 51 items was evaluated by language educators, teacher researchers, and educators in order to determine the overall content of the items and their linguistic accuracy and relevance. Each individual item/statement was reviewed with the specialists in order to incorporate their feedback and eliminate any and all logical, technical, and linguistic flaws in the statements. After gathering feedback from the specialists, it was concluded that 42 items in total would be kept in the first draft of the scale measuring teachers’ self-efficacy. Specifically, from the 42 items, 33 items/statements were affirmatives, and the remaining 9 were in the negatives.

Data Analysis and Results

Item Analysis of Preliminary Draft (Try-Out Form) of Self Control Scale for Undergraduates

The statistical assessment of the collected data occurred in the following order: -

The equally and multidimensionally rigorous criterion of the method of item construction and analysis by degrees was used to refine the items of the adult self-control scale and to finalize the instruments’ construction. To complete this stage of self-control scale construction, the self-control scale was administered to a predominantly representative preliminary sample of undergraduate students from the District of Mandi, Himachal Pradesh, totalling n=78. Subsequently, the self-control scale score for each student was estimated following the earlier outlined method. The self-control scale was in the formative stage, and therefore, potentially, each student’s score could range from a minimum of 42 to a maximum of 210. Subsequently, 27% of the self-control scale total score holders who were members of the 21 undergraduate students’ highest total score group and 27% of the undergraduate students’ group who were total score hold \geq self-control scale bottom quartiles were selected. For ease of reference, the top and bottom intact stratified groups have been labelled as “top group having high scores” and “bottom group having low scores,” respectively. Edward’s criterion approach (1957) provided the primary logic for the selection of these groups for

the analysis of specific statements. Mid-46 % of the cases were culled and not used for subsequent analysis.

Following this, means and standard deviations for every statement were determined for both the high and the low scoring subsections of secondary school teachers. After this, we calculated the t-values of each item to determine the significance of the mean difference for the two groups for each statement of the undergraduate's self-control scale. The value of "t" is the degree to which a statement is able to distinguish the high and low scoring groups. Therefore, t-values for all the 42 statements were calculated and those statements which had t-values equal to or greater than 1.75 were included in the self-control scale for undergraduate students and the remaining statements which had t-values lower than 1.75 were excluded. The t-values for each item in the try-out form of the self-control scale are given in Table 1.

Table 1: T-Values for all the 42 Items of Preliminary Draft of the Self-Control Scale

Item no.	t-value	Item no.	t-value	Item no.	t-value
1	6.11	15	3.96	29	2.40
2	5.21	16	1.64	30	1.36
3	0.97	17	0.01	31	4.04
4	4.65	18	3.04	32	1.11
5	2.11	19	2.25	33	0.62
6	1.12	20	2.67	34	4.39
7	5.95	21	2.96	35	3.12
8	1.56	22	0.66	36	0.52
9	3.37	23	2.16	37	4.00
10	3.46	24	2.53	38	0.56
11	.76	25	4.61	39	2.63
12	3.12	26	5.50	40	2.09
13	4.06	27	9.93	41	3.32
14	1.64	28	2.08	42	4.99

The values for "t" ($t < 1.75$) shown in Bold Letters indicate rejected items.

Values obtained from the above table, 42 items with serial no. 1,2,4,5,7,9,10,11,12,13,15,18,19,20,21,23,24,25,26,27,28,29,31,34,35,37,39,40,41 and 42 were added preliminary draft, and the remaining 12 items with serial no. 3, 6, 8, 3,6,8,14, 16, 17,22,30,32,33,36 and 38 were rejected from the final draft of the self-control scale for undergraduate students.

Reliability of Self-Control Scale for Undergraduates

The reliability of the Self-Control Scale developed for undergraduate students was established using two widely accepted psychometric methods, namely the test-retest reliability method and the split-half reliability method.

These two approaches were selected to assess both the temporal stability and the internal consistency of the scale, thereby ensuring that the instrument yields consistent and dependable results across time as well as across its items.

To determine the test–retest reliability, the final draft of the Self-Control Scale was administered twice to a sample of 78 undergraduate students, with a time interval of three weeks between the two administrations. This time gap was considered sufficient to minimize the chances of memory effects while at the same time being short enough to ensure that no substantial real change in the trait of self-control was likely to occur. After the second administration, the two sets of scores obtained from the same group of students were correlated using Pearson’s Product Moment Correlation Method. The calculated correlation coefficient (r), which represents the reliability index, was found to be 0.98. This obtained value was much higher than the critical table value of 0.339 at the 0.01 level of significance for 76 degrees of freedom. The difference between the obtained and table values was statistically significant at a high level of confidence. This very high coefficient clearly indicates that the Self-Control Scale possesses excellent stability over time, and that the scores of students on the scale remain largely consistent across repeated administrations.

The split-half reliability of the Self-Control Scale was also calculated to examine its internal consistency. For this purpose, the items of the final draft of the scale were divided into two equivalent halves by adopting the odd–even method. The two halves of the scale were then administered to a sample of 40 undergraduate students selected from schools situated in Mandi district. After administering the scale, the responses for both halves were scored separately. The correlation between the scores of the two halves was calculated using Karl Pearson’s Product Moment Correlation Method. The correlation coefficient obtained for the two halves of the scale was 0.547.

Since this coefficient represented the reliability of only half the test, the Spearman–Brown Prophecy Formula was applied to estimate the reliability of the full-length Self-Control Scale. After applying this correction, the reliability coefficient of the entire scale was found to be 0.814. This value was higher than the critical table value of 0.325 at the 0.01 level of significance for 38 degrees of freedom and was therefore statistically significant. The obtained split-half reliability coefficient confirms that the Self-Control Scale has a high degree of internal consistency, indicating that all the items of the scale consistently measure the same underlying construct of self-control among undergraduate students.

Validity of Self Control Scale for Undergraduates:

The validity of the self-control scale (for undergraduate college students) has been demonstrated through several processes to confirm that it is a reliable measure of the self-control construct. Item validity, content validity, intrinsic

validity, and cross validity have all been demonstrated to provide an acceptable level of psychometric soundness to the scale.

Item validity was confirmed through an extensive item analysis procedure. Each of the initial statements contained within the preliminary draft of the scale were analysed statistically for their discrimination abilities. Items with t-values of 1.75 or greater were included in the final version of the scale; items that met these criteria are defined as possessing high discriminative abilities as these items are capable of distinguishing between students having high and low levels of self-control. The removal of the weaker and less effective items from the scale has resulted in the refinement of the final version of the scale and the inclusion of only the most effective and valid items that will contribute to the scales accuracy and reliability.

Content validity of the Self Control Scale was confirmed through extensive consultation with the appropriate subject matter experts during the preliminary development stage of the scale. An expert panel was created that consisted of experienced professionals from the appropriate field of study who systematically reviewed and assessed each item of the scale for relevance, clarity, and representativeness of the self-control construct in undergraduate college students. The experts collectively determined that the items were inclusive, clear, and appropriately representative of the self-control construct and therefore adequate for measuring self-control in undergraduate college students. In addition, the expert panel used a very strict consensus standard and only those items that had at least a 90 percent agreement among the experts were retained in the final version of the scale. Through this process, it can be reasonably concluded that the content of the scale covers all of the necessary components of self-control, thus demonstrating the strong content validity of the scale.

Intrinsic validity of the scale was also established through the determination of the scale's reliability coefficient. The split-half reliability coefficient of the scale was determined to be .98, indicating a very strong internal consistency of the items of the scale and further supports the validity of the instrument.

Cross validity of the Self Control Scale was established through the use of separate and distinct samples of undergraduate college students throughout the different phases of scale development (item analysis, reliability estimation, and norm establishment). The use of independent samples ensured that the psychometric properties of the scale were not sample-specific and could be generalized across different groups of undergraduate students. This strengthened the overall credibility and applicability of the scale.

Norms for Interpreting Self-Control Scores

Before establishing the norms for interpretation of self-control scores obtained by undergraduates, the obtained data were verified for possessing normality. This was done by computing the values of skewness and kurtosis for overall scores of sampled students (N=1200) on the scale.

The value of skewness came out to be 0.001, showing the distribution of total self-control scores is perfectly symmetrical. Scores are evenly spread on both sides of the mean. In addition to this, the value of kurtosis was calculated to be .45, indicating that the distribution of self-control scores is leptokurtic in nature. However, since the value is small, the distribution is close to normal. Further, on the basis of collected data, the mean and standard deviation in respect of self-control scores of all sampled students were calculated which came out to be 75.16 and 11.18, respectively. Then, the raw self-control scores were converted into z-scores by taking into consideration the values of mean and standard deviation for the purpose of establishing norms for the interpretation of obtained self-control scores. The following range of z-scores on a continuum can be used as suggestive norms for interpreting scores obtained on scale for measuring self-control of undergraduates.

Table 2 Norms for Interpretation of Scores on the Self-Control Scale for Undergraduates

Z-score Range	Raw Scores of Self-controls	Interpretation
5.35 and above	135 and above	Very high self-control
5.26 to 3.56	134 to 115	High self-control
3.47 to 1.41	114 to 91	Above-average self-control
1.32 to -0.46	90 to 71	Average self-control
-0.43 to -2.16	70 to 51	Below-average self-control
-2.25 to -3.59	50 to 35	Low self-control
-3.68 and below	34 and below	Very low self-control

CONCLUSION

The present study set out to construct and standardize a Self-Control Scale specifically designed for undergraduate students, recognizing the increasing need for a valid and reliable instrument that captures the modern and multidimensional nature of self-control among young adults. Students enrolled in higher education are exposed to an increasingly dynamic academic and socio-technological environment that necessitates students' continuous control over their thoughts, behaviours, and emotional states in order to achieve long term goals. This need is met by developing a new scale which provides a psychometrically reliable and valid measure of self-control within the Indian context. The increasing pressure placed upon academics in India (due to increased competition), the reliance of many students on technology (e.g., laptops/tablets, smartphones) and the growing expectations of parents and

employers are all indicative of the need for a standardized assessment of self-control.

The tool has undergone several stages of development including item generation, content validation, item analysis, and reliability and validity testing. A total of 51 potential items were generated through an extensive review of the existing literature, along with consultation with experts in the field. After having these items reviewed and refined by experts, a preliminary scale consisting of 42 items was created. Each item was evaluated to determine if it could accurately differentiate between participants based on t-value, and those items that did not demonstrate adequate discrimination were removed from the preliminary scale. Ultimately, 30 items were determined to be effective at assessing self-control among undergraduate populations.

The reliability measures of the tool indicate that the tool is internally stable and consistent. The test-retest reliability indicated that the scores of the tool were temporally stable, as indicated by a very high correlation ($r = .98$). Additionally, the split-half reliability of the tool was calculated using the Spearman-Brown formula ($r = .81$), indicating that the tool demonstrates internal homogeneity. The validity of the tool was demonstrated in three ways: item validity was demonstrated by removing items that did not meet the threshold of discriminatory power; content validity was demonstrated by achieving 90% consensus from the panel of experts; and the intrinsic validity of the tool was demonstrated through strong correlations between the reliability values. Finally, the cross validity of the tool was demonstrated through the use of two separate samples of students during different stages of the item analysis, reliability testing and norm establishment.

A sample of 1200 undergraduate students from Himachal Pradesh, India provided the data used to assess the normal distribution of self-control scores, which were analysed through skewness and kurtosis analyses. Z-scores were then utilized to establish norms, allowing researchers and institutions to categorize each student's level of self-control relative to a larger representation of the college population. Therefore, the Self-Control Scale developed herein, achieved the purpose of being reliable, valid, culturally sensitive and practically applicable. The Self-Control Scale also enhanced the measurement of self-control in higher education and made a significant contribution to both the theoretical understanding and practical improvement of student outcomes.

Applicability and Implications of the Self-Control Scale

The standardized Self-Control Scale has substantial utility for assessing and promoting student self-regulation in educational, developmental, and psychological settings; thus, it is a useful decision-support tool rather than just a measurement device. Colleges and universities are excellent examples of academic institutions where students' self-regulatory capacities could be assessed using the tool. Results from the assessment would provide a method for

identifying students at risk for academic procrastination, poor time management, and increased likelihood of dropping out of their courses. This data could then be used to develop targeted support programs (e.g., study-skill workshops, counselling sessions, digital distraction management) for identified students, and provide a basis for developing curriculum content, co-curricular activities, and policy structures that reflect the developmental needs of students.

As a tool for psychologists and counsellors in the area of mental health and counselling, the scale will assist in the early identification of self-regulation difficulties which are frequently associated with stress, anxiety, impulsivity, and emotional dysregulation. Early identification will allow for timely interventions through evidence-based therapeutic methods. Researchers will find the tool to be a reliable and culturally validated measure for use in studies on personality development, behaviour, motivation, and academic performance. Additionally, the scale will facilitate longitudinal studies examining how self-control develops during college years and how interventions affect this development.

Employer organizations view self-control as one of the most important competencies in the employability and professional development arena because they value reliability, responsibility, and self-management in employees. Therefore, the scale could be incorporated into career-readiness frameworks to enable students to develop personal development plans and prepare for internship and employment opportunities. Furthermore, in today's digital world characterized by dependency on smartphones, multitasking, and technology-related attention deficits, the scale can serve as a significant component of digital well-being initiatives. The scale can provide the basis for developing productive enhancement and digital hygiene programs to support healthier online behaviours.

The implications of this research span theoretical, practical, and policy dimensions. From a theoretical standpoint, the study affirms the importance of self-control as a primary developmental skill during emerging adulthood and provides additional evidence for existing self-regulated learning theory perspectives emphasizing planning, monitoring, and sustained effort. The study also expands knowledge about how current environmental factors (e.g., peer pressure and digital distractions) affect students' regulatory abilities. Practically, the findings support the implementation of early and preventive intervention strategies so students can receive structured training to improve their ability to manage time effectively, demonstrate resilience and coping skills prior to experiencing academic or behavioural problems. Additionally, the scale can serve as a way to evaluate the effectiveness of programs implemented by institutions to enhance student engagement and performance.

At the policy level, the findings emphasize the need for institutions of higher education to invest in systems that provide support to students (e.g., mentoring programs, quiet learning spaces, wellness programs) while establishing classroom norms that minimize unnecessary distractions. Aggregate findings

from multiple campuses can be used to develop policies to decrease excessive academic pressure and to develop campus environments that are more conducive to student learning. Socially, enhancing the self-control competencies of students will produce individuals who engage in prosocial behaviour, healthy lifestyle choices, demonstrate fiscal responsibility and make ethical, long-term decisions. As such, strengthening self-control competencies in youth will produce a workforce that is capable of contributing positively to societal advancement and economic growth.

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