

Measurement and Validation of Subjective Well-Being and Student Engagement in an Indian Context

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Abstract

Purpose: - The paper sets out to investigate an empirical attempt to validate the relationship between subjective wellbeing (SWB) and Students Engagement (SE) in Indian context.

Design/methodology/approach : A web based survey was administered in three (3) postgraduate management institutes and 112 valid responses were captured through questionnaires, SPSS version 23.0 and Smart PLS version 3.0 were used for data Analysis, EFA (Exploratory Factor Analysis) and CFA (Confirmatory factor analysis) was used to confirm the hypothesized factor structure of subjective wellbeing (SWB), Students wellbeing (SE).

Findings : The result of the study indicates that subjective well-being of students are more influenced by their negative emotions than positive one. The study directs our attention towards student psychological needs which are very important to monitor their SWB level. Students who are weak in academic matters, sometime suffered with negative thoughts that may hamper their performance and achievements.

Research limitations/implications: The present research is limited to only three institutes with low sample size. Future research could be extended to more institutes with large sample size and different disciplines such as medical, engineering and law. The present research only established one variable with relation to SWB i.e. student engagement, thus other variables such as personality, happiness, health, family could also be tested.

Practical implications: The paper focuses on holistic development of student's needs and open up the truth that constant engagement via behavioral, emotional and cognitive component of the student's engagement process is must for the development of the student in education setting.

Social implications: -The present study carries implications for practitioners as it provides them useful insights related to how they should focus on student engagement.

Originality/value: -The present study is one of the few works and first one that exclusively examines and validates an instrument which can be used by educators to measure WB and SE.

Keywords: Student Engagement (SE), Subjective well-being (SWB), Partial Least square structural equation modelling (PLS-SEM), Positive and Negative Emotions (PANE), Psychological Well-bein

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1. Introduction

The concept of subjective well-being (SWB) is proposed by Diener (2006) as "evaluation of both positive and negative, that people make of their

lives. It includes reflective cognitive evaluations, such as life satisfaction and work satisfaction, interest and engagement, and affective reactions to life events, such as joy and sadness” (p.399-400). Subjective well-being (SWB) measure person’s overall experience in life (both positive and negative effects) and self-described happiness. The affection dimension of subjective well-being is the key driver of students’ engagement in learning activities (Skinner, Furrer, Marchand & Kinderman, 2008). In class settings, satisfaction of students with college, teachers and intelligence is related to subjective well-being of them (Ash & Huebner, 2001). Moreover, some theories for example, flow theory posits that student improve their SWB when they experience academic achievement and flow in the teaching method Johnson (2001). Similarly, self-determination theory specifies that students’ SWB increases when they are satisfied with their psychological needs (Deci & Ryan, 2002). Considering the above views of these authors, we shall consider that student well-being can be related to the level of participation by students in terms of behavioural attitude, emotional state with college and cognitive ability to learn, grow and engagement. Finn (1989) defined student engagement as “level of participation in extra-curricular activities offered to them by their school” (Cited by Sharma & Saxena, 2014; p.25). Student engagement positively affects high academic achievement, personality development and high satisfaction with life. Therefore, student engagement or disengagement depends on their level of intellectual-social involvement and behavioural participation in learning experience in class.

Therefore, it becomes imperative to study and understand subjective well-being and student engagement in Indian context, where very a few empirical studies on SWB and engagement from students’ point of view are found. This paper examines the level of SWB and student engagement of PGDM/MBA students. This paper

also makes an attempt to test and validate the measurement instrument of SWB and student engagement in Indian context thereby investigating the relationship between SWB and student engagement.

2. Review of Literature

2.1 Subjective well-being

Before defining well-being, it is necessary to know the chronological background of the construct. Bradburn (1969) worked on psychological reactions of common people in their everyday difficulties that they faced in their lives. Bradburn specified psychological well-being model (or happiness as referred by him) as: an individual will be high in psychological well-being in the degree to which he has an excess of positive over negative affect and will be low in well-being in the degree to which negative affect predominates over positive (Bradburn, 1969, p.9)

Although Ryff (1989) criticized Bradburn’s work and believed that it is subjective in nature and consists of three interrelated components: pleasant moods and emotions; unpleasant moods and emotions; and life satisfaction. Later, Herzlich (1973) emphasizes on subjective approach of defining well-being and relate it with health. Herzlich proposed both negative and positive aspects of health: Positive health means absence of illness and second reflects the unawareness of illness.

In 1978, Shin and Johnson defined well-being in superior way by stating it as “a global assessment of a person’s quality of life according to his own chosen criteria” (p. 478). But the problem with this definition is that ‘quality of life’ is interchangeable with ‘well-being’ in various disciplines which make situation “conceptually muddy” (Morrow & Mayall, 2009, p. 221). An attention-grabbing development in well-being is its relationship with clinical psychology. Keyes in 2002 viewed mental

health as a condition of well-being symptoms. He said that mental health is formed when “an individual exhibits a high level on at least one symptom of hedonia and just over half the symptoms of eudaimonia, i.e., positive functioning in life” (Keyes, 2009, p. 15).

Basically, two approaches emerged: the hedonic means connecting to ‘pleasure’. This approach measured ‘how people evaluate their life’ that occurred during job performances and experiences such as happiness, antagonism, joy, anger or sadness along with judgmental component on its own live events (e.g. Bradburn 1969; Lyubomirsky & Lepper, 1999). Hedonic approach measures two dimension of well-being; Affection and Satisfaction. Affection includes both positive and negative moods and emotions of individual. This approach is acknowledged as ‘Subjective well-being (SWB) as theory relates individual independent and internal observation. Another approach relates people’s sense of purpose in his life. Ryff (1989) states that “to achieve psychological well-being individuals should have positive psychological functioning” (p. 1071). Individual works on weakness and strengths, make himself independent while continuously growing his positive psychological functioning (e.g. Ryff, 1989; Waterman, 1993). Ryff (1989) relates personal growth along with positive potential as psychological well-being (PWB). PWB include six-factor analysis; self-acceptance, autonomy, personal growth, purpose of life, environmental mastery and positive relation with others.

These two approaches are inter-related to each other through conceptually but both are completely different from each other. However, most of the researchers now believe that well-being is multi-dimensional construct (e.g., Diener, 2009; Pollard & Lee, 2003). Accordingly, Thomas (2009) argued that well-being is “intangible, difficult to define and even harder to measure” (p.11).

2.2 Student Engagement

Engagement is defined as “a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption” (Schaufeli, Salanova, González-Romá, & Bakker, 2002; Bakker, Tims, & Derks, 2012). Likewise, development of students in terms of academic and life with satisfaction could better be achieved through positive state of mind. The state of well-being will help students to learn and grow. Engagement of students in the class has been defined “as constructive, enthusiastic, willing, emotionally positive and cognitively focused participation with learning activities in the classroom” (Skinner & Pitzer 2012, p22). Student engagement activities such as icebreaker games, brainstorming, research, technology usage, case studies, role-playing, writing and subject summaries are beneficial to engage university students Nilson (2010). Whereas, the level of engagement decreases when students experience absenteeism, aimlessness, academic failure, boredom, apathy and drop out Martin (2003).

2.3 Why is it important in class setting?

The engaged life and pleasant life are the most important indicators of individuals’ SWB (Seligman, 2002). Any class school or university, the main domain for learning is being engaged and pleasure, since they spend most of their time in the class. Shoshani and Steinmetz (2013) evaluated the potential benefits of positive psychology interventions for enhancing cognitive health of students in the class. Authors suggested that education structure must include well-being as an integral part of the institute curriculum. On the same note, Deveci and Ayish (2017) conducted research study on engineering students to know how academic and personal development of students could be improved through well-being.

Out of 1,960 male engineering students, 80 participated in freshman year experience program-an initiative to reduce retention rates among students. The results show that meeting with their advisers and social activities are the most driver factor during their engagement in freshman year experience program. After self- awareness (33%), many students (55%) agreed that self-confidence is the main component of well-being.

To assess the correlation between student's satisfactions with engagement. Antaramian (2017) investigated 357 undergraduate students' very high life satisfaction and its correlation with academic performance from one mid-Atlantic university. The author assessed intellectual, engagement, faculty engagement and beyond-class engagement to measure course material, interest; interaction with faculty and feeling of belonging in university. The study concludes that students with very high life satisfaction exceed in terms of student engagement, lower academic stress, high academic performance and higher-Grade Point Average (GPAs) than those with less satisfied students. Serrano and Andreu (2016) examined the association between subjective well-being, perceived emotional intelligence, perceived stress, academic engagement and performance. The study assessed 626 secondary and high school students from valencian community which supports the positive relationship between emotional intelligence and subjective well-being and academic engagement of students.

Some researchers emphasized that the design of academic curriculum has positive affects on student's psychology and engagement. For instance, Strevens and Wilson, (2016) studied and proposed the design of law curriculum in England and Wales to dispersed basic principles of positive psychology and management of subjective well-being through self -determination theory. The Authors suggested that an effective approach of

'self-management' and 'engagement with personal development' from Australian Model Admission Rules could be adopted in the UK as students from both the countries suffer psychological distress from law set of course.

Eryılmaz, A. (2015) study suggests that the level of subjective well-being and engagement can be increased by applications of the SWB increasing activities and engagement increasing activities through teaching methods. The applications of these activities affect the level of positive and negative emotions and cognitive, emotional and achievement and behavioral engagement of students. The study conducted experimental (14 males and 22 females) and qualitative (10 male and 26 female) method among university students. By using multiple observations and interviews method, Halm (2015) conducted research on arts students in western New York. Researcher suggests that engagement is the bond between a teacher and students; stand on mutual respect and shared goals. This bond creates freedom and trust between the two. Therefore, students who are actively engaged in learning process, learn more and in better way. The results further suggest that personal, academic and professional goals of students impact their engagement and many bring them to the class.

Singh and Srivastava (2014) developed and validate student engagement scale (SES) in the Indian context. The article tested 166 students from management school. Authors conceptualized student engagement into three dimensions; senses of belonging, individual engagement and collaborative engagement. Shell & Nagpal (1992) developed subjective well-being instrument by stepwise ethnographic exploration method. In this method, a group of interviewer or experts start from unstructured interview and moved towards structured interview till they reached on consensus on concern lists of a concept. The interview was administrated to 520 respondents. Authors reduced the original 130 items to 40. It is designed to

measure feelings of day-to-day experience (both positive and negative) by an individual. This instrument is known as the subjective well-being inventory (SUBI).

To sum up, the present literature review reveals that most of the surveys were based on school students or graduate students. However only a few studies focused on professional courses like MBA and PGDM. The gap as well as need of the present study appeared here, that MBA/PGDM students' must possess wide-ranging skills. They look for entrepreneurship through learning activities; they employ decision making skills in workplace through practical case studies, role playing, live projects and simulation tasks. They are dynamic and more vigorous, keen to learn new concepts. This let a need to study to students' well-being and their engagement level at professional level course.

3. Research Methodology

3.1 Sample

The participants consisted of 112 post graduate students of a management institutes situated in the Pune city. Three random institutes was selected using purposive sampling technique. All the students were studying Post Graduation Diploma in Management (PGDM) courses and were targeted as participants. A questionnaire was administered through emails (Google Forms). Data collection period was from month March-June 2017. A total of 120 responses were received, out of which 8 respondents were discarded due to incomplete information by this respondent. At the end the final sample of 112 respondents were considered for data interpretation. The sample consisted of 88 (78.6%) male students and the remaining 24 (21.4%) female. Equal percentage of age group was found from each group 56 (50%) belong to 18-22 years and 56 (50%) belong to 23 and above years. In terms of their prior experience at workplace before MBA/PGDM, the number of students were restricted to 18 only (16.1%) and rest 94 (83.9%) were fresh from the college. From 112

management students, 49 (43.8 %) were studying in first year of MBA course and remaining 63 (56.2%) were studying second year of MBA. Source of earning of most of students were father 95 (84.8%) and others were mother 6 (5.4 %) and Both Parents 11 (9.8%). The sample was highly skewed towards not living in campus 75 (67.0%) than living in campus 37 (33.0%).

3.2 Measurement Instrument

The scale to measure subjective well-being of students was drawn from Shell and Nagpal (1992), known as the subjective well-being inventory (SUBI). The scale measured 40-items to assess a self's positive and negative mental state and overall satisfaction with life. To measure student's subjective well-being, final 32 items were selected through brainstorming sessions with seniors faculty members. To measure engagement of students, student engagement scale (SES) questionnaire by Singh and Srivastava (2014) consisting of 32-items were administrated. The scale measured three dimensions of engagement i.e. sense of belonging, individual and collaborative engagement. Each item was rated on a 3-point Likert scale ranging from 1 (Not so much), 2 (To some extent) and 3 (Very Much). For statistical analysis Statistical Package for the Social Sciences (SPSS) version 23.0 and Smart PLS version 3.0 were used.

4. Results and Discussion

In the present paper, Exploratory Factor Analysis (EFA) was used to analyze the factor structure of the responses received on subjective well-being and student engagement. Confirmatory Factor Analysis (CFA) was used to confirmed the hypothesized factor structure of subjective well-being and student engagement, and also to validate the measurement model and to determine the relationship between subjective well-being and student engagement.

4.1 Evaluation of Exploratory Factor Analysis (EFA)

In order to run EFA, the pre-requisite of each construct have been performed by conducting Cronbach alpha reliability test and Kaiser-Meyer-Olkin (KMO) test of sampling adequacy. A commonly accepted value of alpha for

internal consistency of construct should be greater than 0.7. A rule of thumb, for KMO measure of sampling adequacy should be more than 0.50 and statistically significant at $p < 0.05$ as suggested by Hair et. al.(1998). Table 1. shows the means, standard deviations and cronbach alpha of studied scale. All the item of subjective well-being and student engagement were greater than 0.7, thus displaying high internal consistency between items.

Table 1. Means, Standard Deviations and Cronbach Alpha of Studied Scale (N= 112)

Scale	Means	SD	Cronbach (α)	No. of Items	Interpretation
Subjective Well-Being	1.78	0.305	0.932	32	Excellent
Student Engagement	1.59	0.294	0.940	32	Excellent

Source: Authors' Findings

To analyze the underlying factors of each construct and better understanding of variables, exploratory factor analysis was performed. For extracting loadings, principal component analysis was performed using varimax rotation method. Varimax method developed by Kaiser (1985) was used in present study because it simplifies each factor by a large number of zero loadings and a small number of large loadings. Kaiser's Eigen value > 1 rule was used to investigate which factor to retained in further analysis. For sample size greater than 100, the factor loadings ≥ 0.50 implies practical significance and if it is ≥ 0.70 it is good (Hair et.al., 2006). In present study factor loadings ≤ 0.50 been eliminated because higher loadings provide a clear road to what the factor is measuring (Hair et. al.2006). Average variance extracted (AVE) measure the average of squared factor loadings. An AVE, satisfactory threshold value of 60 % or less is acceptable (Hair et.al. 2006).

Table 2. Shows the result of EFA for subjective well-being, the construct fulfilled the KMO test (≥ 0.73 , $p = .000$). The first factor 'Positive and Negative Emotions' composed of 22-items explaining 32.73 percent of the variation in

subjective well-being of students. The second factor 'Satisfaction with Life' consists of 3-items explaining 12.20 percent of variation in subjective well-being of students. The cumulative percent of variance is 44.94. The factor loadings less than 0.5 were deleted. There is no cross loadings between factors. Table 3. shows the results of EFA for student engagement, the KMO value is ≥ 0.82 with significant value of $= .000$. The results extracted five factors of student engagement. The first factor 'Sense of Belonging' composed of original item with two more item resulting 9-item scale explaining 37.02 percent of variance in student engagement. The second factor 'Individual Engagement' occupied only 6-items scale, the remaining items were deleted due to poor factor loadings. The third factor 'Collaborative Engagement' poised only 5-items scale, rest were deleted due to poor loadings. The fourth factor named 'Alumni Engagement' because they work from other senior students, help them and seek guidance from others. This factor consist of 3-items explaining 5.13 percent of change in student engagement. The last factor 'Sustainability Engagement' is named so because these factor describe student drive to reach and sustain engagement. This factor composed of only 2-items

scale but explain 4.23 percent of variance in student engagement which is significant to note. The cumulative percent of variance is 62.26. The

loadings less than 0.5 were eliminated and no cross loadings were found in student engagement construct.

Table 2. Exploratory Factor Analysis of Subjective well-being (SWB)

Subjective well-being			
	Factor loadings	Eigen value	% of variance
KMO=0.793, Approx Chi-Square = 2002.7, Sig. = .000, df= 496			
Do you think you have achieved the standard of living and the social status that you had expected?	.567	10.475	32.73
How do you feel about the extent to which you have achieved success and are getting ahead?	.620		
On the whole, how happy are you with the things you have been doing in recent years?	.553		
Do you sometimes experience moments of intense happiness almost like a kind of bliss?	.575		
Do you sometimes experience a joyful feeling of being part of mankind as of one large family?	.551		
Do you feel confident that relatives and/or friends will help you out if there is an emergency, e.g. if you lose what you have by fire or theft?	.518		
Do you get easily upset if things don't turn out as expected?	.669		
Do you sometimes feel sad without reason?	.645		
Do you feel too easily irritated, too sensitive?	.647		
Do you feel disturbed by feelings of anxiety and tension?	.633		
Do you consider it a problem for you that you sometimes lose your temper over minor things?	.646		
Do you feel your life is boring?	.693		
Do you worry about your future?	.565		
Do you feel that minor things upset you more than necessary?	.686		
Do you easily upset if you are criticized?	.641		
Would you wish to have more friends than you actually have?	.610		
Do you sometimes feel that you miss a real close friend?	.582		
Do you sometimes worry about your health?	.536		
Are you disturbed by a feeling of giddiness?	.761		
Do you feel you get tired too easily?	.638		
Are you troubled by disturbed sleep?	.625		
Do you sometimes worry that you do not have close personal relationship with other people?	.673		
Do you normally accomplish what you want to?	.535	3.906	12.20
Do you feel you can manage situations even when they do not turn out as expected?	.552		
Do you feel confident that in the case of a crisis (anything which substantially upsets your life situation) you will be able to cope with it/face it boldly?	.531		
Cumulative percent of variance (Validity)			44.94
Extraction Method: Principal Component Analysis.			

Rotation Method: Varimax with Kaiser Normalization.^a

Source: Output from SPSS Version 23

Table 3 Exploratory Factor Analysis of Student Engagement (SE)

Student Engagement	Factor loadings	Eigen value	% of variance
I have high regard for the institute.	.768	11.479	37.02
I am an integral part of the institute.	.713		
I recommend my institute to others.	.842		
I shall be an active alumnus	.605		
I am valued at the institute.	.633		
I take pride in being a part of the institute.	.818		
I shall advocate the institute for others.	.772		
I am happy studying at the institute.	.840		
I have gained management insights which I can apply throughout my life.	.635		
I am engaged in the learning process.	.784		
I ask questions in the classroom	.536		
I work hard in a course.	.634		
I strive to exceed the expectations of my faculty.	.542		
I relate to the models and concepts through class projects and internship.	.646		
I am wowed with my learning experiences.	.539		
I discuss various management issues with faculty outside the classroom.	.591		
I use social media to discuss academic matters with my classmates.	.579	2.221	7.16
I talk over phone on academic matters with my classmates.	.588		
I seek the help of my seniors to clarify my doubts on academic matters.	.815		
I seek help from my seniors for career guidance.	.722		
I work with other students on class project	.651		
I help my classmates on academic matters.	.752	1.592	5.13
I seek help from my classmates.	.660		
I participate in the class.	.793		
I participate in co-curricular activities.	.826	1.314	4.23
Cumulative percent of variance (Validity)			62.26
Extraction Method: Principal Component Analysis.			
Rotation Method: Varimax with Kaiser Normalization. ^a			

Source: Output from SPSS Version 23

4.2 Confirmatory Factor Analysis (CFA)

The present paper deployed Smart PLS software, developed by Ringle, Wende & Will (2005) to assess the Partial Least Squares Structural Equation Modeling (PLS-SEM). Smart PLS methodology is gaining wide popularity in behavioural sciences (Bass et. al.,2003), organization (Sosik et. al., 2009) and business

strategy (Hullan, 1999) research because it is based on the parameters which are estimated by means of a series of least squares and relationship between latent variable and observed indicators . The PLS-SEM analysis was used in present study because it is able to handle small data samples and researcher can use a single-item construct. It is also an effective tool to test the relationship between constructs by reducing type II errors. To report

PLS-SEM analysis, two-stage process (Chin, 2010) was performed; first the scaling or measurement model evaluation, followed by structured model significant test.

4.2.1 Measurement Model: Reliability and Validity

The measurement model was evaluated to check composite reliability, convergent validity and discriminant validity of construct studied on the basis of the threshold value and significance. The composite reliability was conducted to ensure that the sample is truly biased free. Coefficients of

Composite Reliability (CR) should be 0.70 or above, if it is exploratory research (Bagozzi and Yi, 1988). The composite reliability of the entire construct is higher than the threshold value of 0.70 (refer table 4). Thus, composite reliability is confirmed.

To ensure convergent validity, the average variance extracted (AVE) was computed. The value of AVE should be 0.5 or higher, for superior results (Fornell and Larcker, 1981). The AVE for all the construct is higher than the threshold value of 0.5 with $p < 0.05$ (refer table 4). Therefore, the model converges adequately.

Table 4. Reliability and Validity of Measurement Scales: Fornell-Larcker criterion

Scale s	Alpha*	CR	AVE	SWL	PAN E	SOB	IE	CE	AE	SYE
SWL	0.707	0.836	0.629	0.793						
PAN E	0.924	0.935	0.526	0.200	0.726					
SOB	0.909	0.904	0.656	0.505	-0.107	0.810				
IE	1.000	1.000	1.000	0.303	0.033	0.163	1.00*			
CE	1.000	1.000	1.000	0.450	0.121	0.389	0.151	1.00*		
AE	0.718	0.876	0.780	0.212	0.140	0.266	0.263	0.340	0.883	
SYE	1.000	1.000	1.000	0.127	0.123	0.309	0.264	0.226	0.313	1.00*

Notes: *Correlation is significant at the 0.05 level (1-tailed). ** 1.00= Single-item construct

The off-diagonal values are the correlation between latent variables and the diagonals are the square root of AVE

Alpha, Cronbach Alpha ; CR, Composite Reliability; AVE, Average Variance Extracted; SWL, Satisfaction with Life; PAN E, Positive and Negative Emotions; SOB, Sense of Belonging; IE, Individual Engagement; CE, Collaborative

Engagement; AE, Alumni Engagement; SYE, Sustainability Engagement.

The discriminant validity measures that the construct is unique and distinct. This is computed through calculating the square roots of AVE of each latent variables. The value of square roots should be greater than the correlation among the latent variables (Fornell and Larcker, 1981). The square roots for the entire construct is greater than

the inter-construct correlations (refer table 4). Thus, results confirmed discriminant validity.

Composite reliability is also used to check the internal consistency, which should be greater than the benchmark of 0.7 and AVE should be greater than 0.5 to be considered adequate (Fornell and Larcker 1981). Since the calculated value of composite reliability is 0.720 and the AVE value of 0.599 which shows an adequate result for the present model.

In order to obtain a model fit, researchers had dropped the items which did not meet any conditions of standard scaling and re-run the software after deleting the items to obtain the precise model criteria.

4.2.1 Structural Model: Testing path coefficient significance and hypothesis

After the acceptance of measurement model, the assessment of structural model was examined to test the relationship between the exogenous (independent variable) and endogenous (dependent variable). To test the significant of all relationships, co-linearity was evaluated. The variance inflation factor (VIF) values of all the latent variables were less than threshold value of 5.

The PLS-SEM assessment of structural model included inner (path coefficients) to evaluate the significance of relationship model, R^2 to evaluate the model's predictive accuracy, F^2 to assess the impact of the independent variable on a dependent variable (Hair et.al.2013). "Bootstrapping is a re-sampling approach that draws random samples from the data uses these samples to estimate the path model multiple times under slightly changed data constellations" (Hair et. al., 2013, p.162). Therefore, to examine the coefficient's statistical significance of estimates bootstrapping is performed using one-tailed t-test distribution, on 500 subsamples with $t > 1.645$ at $p < 0.05$. Table 5 display hypothesis testing results after bootstrapping. F^2 was calculated to assess the substantial power of exogenous variable on the R^2 value of the endogenous variable. The value of F^2 should lie between 0.02 to 0.15 for small effect size. If its value lies between 0.15 to 0.35 it reflected medium and high for 0.35 and above.

Hypothesis H1: An increase in subjective well-being among students is associated with an increase in student engagement

Table 5. Result of Structural Model -Testing Hypothesis

Path	VIF	β^a	R^2	P Values ^b	F^2	Result
SWB -> SE		0.058	0.110	0.573*	0.166	Insignificant
SWL-> SWB		0.343		0.000*		Significant
PANE ->SWB		0.809		0.000*		Significant
SOB -> SE		0.199		0.010*		Significant
IE -> SE		-0.038		0.067*		Insignificant
CE ->SE		0.219		0.039*		Significant
AE -> SE		-0.230		0.010*		Significant
SYE -> SE		0.210		0.040*		Significant

Notes: VIF, Variance inflation factor; SWL, Satisfaction with Life; PANE, Positive and Negative Emotions; SOB, Sense of Belonging; IE, Individual Engagement; CE, Collaborative Engagement; AE, Alumni Engagement; SYE, Sustainability Engagement.

^aStandardized β (Path Coefficient)

^b*p* Values are calculated using bootstrapping method on a subsample of 1000 (* significant at the $p = 0.05$ level)

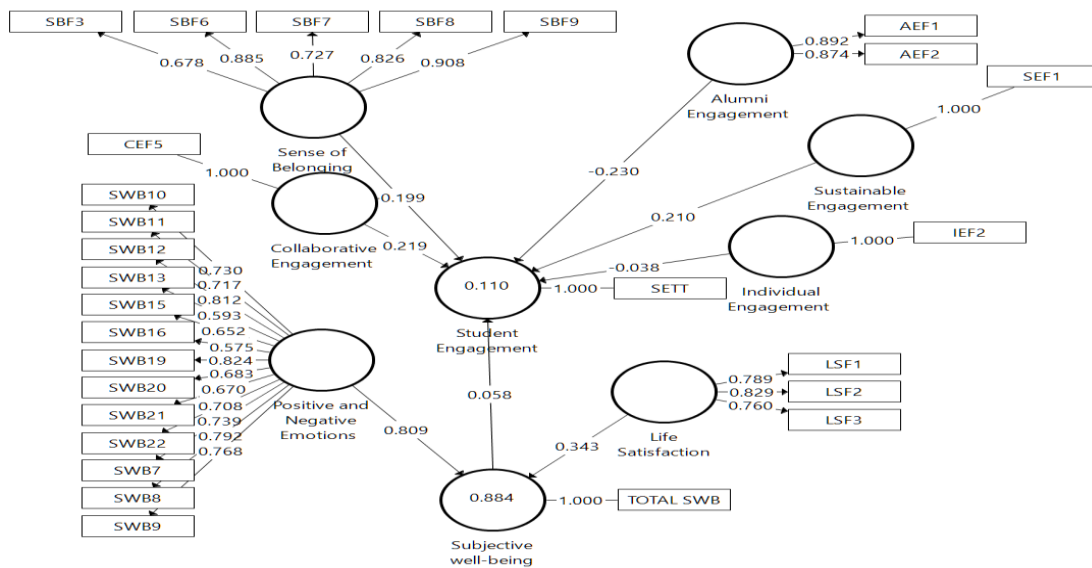


Figure 1. Path-coefficient (β^a) results of Subjective well-being and Student Engagement

Notes: SWL, Satisfaction with Life; PANE, Positive and Negative Emotions; SOB, Sense of Belonging; IE, Individual Engagement; CE, Collaborative Engagement; AE, Alumni Engagement; SYE, Sustainability Engagement.

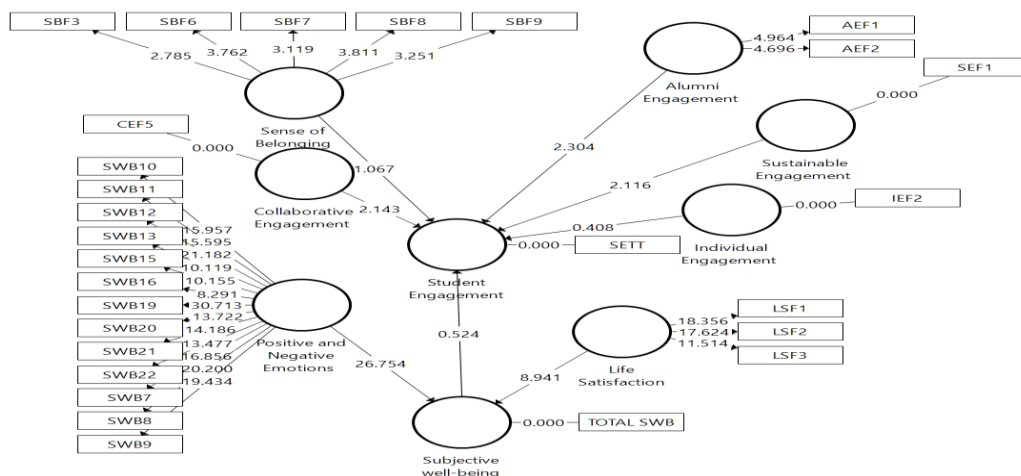


Figure 2. Bootstrapping (t-stat) results of Subjective well-being and Student Engagement

Notes: SWL, Satisfaction with Life; PANE, Positive and Negative Emotions; SOB, Sense of Belonging; IE, Individual Engagement; CE, Collaborative Engagement; AE, Alumni Engagement; SYE, Sustainability Engagement.

The value of path coefficient generated from bootstrapping procedure of SWB on SE, $p < 0.05$ for one tailed test. The value of t-test is also less than 1.645. Subjective well-being has insignificant impact on SE ($\beta = 0.058$, $p > 0.05$, refer to Table 5). This result contradicted H1. Thus, we failed to reject the corresponding null hypothesis that SWB is not related to SE. SWB ($F^2 = 0.166$) also found to be the medium predicting power of student engagement. Thus, it can be stated that subjective well-being has same effect size on student engagement.

The value of path coefficient of Satisfaction with Life ($\beta = 0.343$, $p = 0.000$) on SWB and Positive and Negative Emotions ($\beta = 0.809$, $p = 0.000$) on SWB were found significant. The value of path coefficient of Sense of Belongingness ($\beta = 0.199$, $p = 0.010$) on SE, Collaborative Engagement ($\beta = 0.219$, $p = 0.039$) on SE, Alumni Engagement ($\beta = -0.230$, $p = 0.010$) on SE, Sustainability Engagement ($\beta = 0.210$, $p = 0.040$) on SE were found significant whereas only one factor, Individual Engagement ($\beta = -0.038$, $p = 0.067$) on SE found insignificant.

5. Discussion

Through this study, we found that subjective well-being measures the experiences of individuals including both positive and negative emotions with life. Most of the studies on college students focus on their academic performance, high engagement level, academic achievement, low retentions and senses of participation which is the result of positive behavior and emotions of students in academic settings. The present study required to investigate the relationship between subjective

well-being (SWB) and student engagement (SE). The study also examined and validated the factors of SWB and SE from Indian Context.

The 32-items scale have equally 16 positive and negative emotions. The results of EFA of subjective well-being showed that emotions such as life-interesting, life-compared with the past, confidence in coping with future, belongingness-common force, help by friends/relatives in illness, family-a source of help in problem solving and closeness within family did not load higher than .50 on any of the factors and were dropped from the following analyses of factors associated with subjective well-being domain. The 25 items scale measure the feelings of well-being of students by yielding two factors; positive and negative emotions factor (22-item scale) and life satisfaction (3-item scale).

Positive and Negative Emotions (PANE) consists of 6 positive emotions with life such as confidence, congruence, belongingness, joyful, intense happiness and things done in recent years whereas 16 negative emotions affect well-being of students such as upset by unexpected things, feeling sad without reason, irritability, anxiety and tension, short temper, uninteresting life, worry about future and health, upset, giddiness, disturbed sleep, getting tired too easily and lack of close relationship or friend. Life satisfaction (LS) consists of 3 positive emotion related to the satisfaction of student in their academic life i.e. accomplishments in life, confidence of managing unexpected situations and confidence in facing crisis situation. These three emotions display satisfaction of students with their past achievements and performance, which result the confidence in students to face unexpected situation during their job roles. That is why this factor named as "Life Satisfaction" of students.

The original scale having three factors i.e. sense of belonging (7-item), individual engagement (13-item) and collaborative engagement (12-item)

respectively. During the EFA for student engagement construct, five factors were extracted with factor loading of items more than 0.50. For student engagement construct, sub-dimension was increased to five factors i.e. sense of belonging (9-item), individual engagement (6-item), collaborative engagement (5-item), alumni engagement (3-item) and sustainability engagement (2-item). The factors such as contribution to classroom discussion, aha! Feeling at the institute, time flow, learning applications, discuss outside the classroom, group participation and exchanging notes ad presentations did not load higher than 0.50 on any of the factors and therefore excluded in further process of CFA.

Confirmatory Factor Analysis (CFA) was conducted using the results from EFA of both the construct. The aim was to confirm and validate the scale before concluding any relationship between the two. CFA was performed in Smart PLS software, developed by Ringle, Wende & Will (2005). Based on the CFA, the convergent validity, discriminant validity and composite reliability of the constructs were established.

Subjective well-being construct is a two-factor construct after EFA and consisted of 22-items and 3-items respectively. All these items were subjected to a CFA with using Anderson and Gerbing's (1988) two-step approach of analysing measurement model (outer model) and structural (inner model).

The goal of analysing the outer model or scaling was to provide support for the suitability for their addition in the path model. Therefore, PLS algorithm analysis was run, to examine reliability and validity of latent construct. To obtain a model fit, the researcher dropped the items which were ≥ 0.5 (Hair et. al., 2011). The PLS-SEM estimated composite reliability ≥ 0.7 (Hair et. al., 2011), convergent validity ≥ 0.5 (Chin, 2010) and discriminant validity was higher than all its cross-loadings with other constructs (Fornell &

Larcker, 1981). Therefore, measurement characteristics of constructs are acceptable. In the second step, bootstrapping was performed to check the weight significance of outer model (Hair et. al, 2011; Hair et. al,2012b).

6. Conclusion and Implications

Based on the results of present pilot study, instruments of subjective well-being and student engagement were developed that is applicable in the Indian context. The study was conducted in three postgraduate management institutes of India. The findings of EFA provided the evidence of validity and reliability of the instruments. During CFA, some items were deleted to establish the confirmatory model fit. The study shows that subjective well-being of student instrument measure two factor first, positive and negative emotions (sad without reason, easily irritated and upset, anxiety, achieved success and happiness, short temper, worry about future, boring life, upset on being criticized, wish to have more friends, giddiness, disturbed sleep, easily tired and worry for lack of personal relationship with other) and second, satisfaction with life (accomplishment, feel confident to cope with crisis and manage unexcepted situations). Therefore, student psychological needs are very important to monitor their SWB level. Negative emotions in student life could distract their level of confidence and achievement in career. Students who are weak in academic matters, sometime suffered with negative thoughts that may hamper their performance and achievements. It is, therefore, very important to ensure that students are free from such negative environment. Educators should take care of, not to discredit or ignore such students because negative feeling also affects the health of student (tired, sleepy, giddiness, anxiety). Satisfaction with life facilitates students to cope with both negative

emotions and situations. Both factors are statistically significant to SWB.

The study shows that student engagement instrument measured five factors; sense of belongingness (advocate and recommend the institute, feeling of pride, happy and gaining insight knowledge which he/she can apply throughout their life). Individual engagement (ask questions), Collaborative engagement (seek help from seniors), Alumni engagement (helping other students in projects and academic matters). Sustainability engagement (participate in the class). The sense of belongingness shows the identification of student with studying institute (Voelkl, 1997). It is friendly and sociable milieu of institute that makes student engaged. Students share and acquire knowledge through asking questions in the class at individual level. Individual engagement shows their own commitment towards learning and development. A student may seek help from senior to work together (collaborate), explore, learn and understand new dimension of academic matters. Zhao and Kuh (2004) stated that students who work in group, their academic performance get strengthened. Alumni engagement further benefit ex-students as well as former students in co-constructive learning and other life skills such as leadership skills, teamwork skills, social skills, everyday challenges and adaption skills. We find sustainability engagement, a single-item scale equally contributing in students' engagement in education setting. To sustain and maintain individual engagement students' effort to participate in the class. Further, our study shows that only individual engagement is statistically insignificant factor of SE. The present study reveals no statistical relationship between SWB and SE.

7. Limitations and Future Research

The study has some limitations. The instruments developed and validated in this study could be used by educators to measure SWB and SE. The scale

could also be used to defining policy set up for holistic development of students such as entrepreneurial development, personality development and indirect learning. The present research is limited to only three institutes with low sample size. Future research could be extended to more institutes with large sample size. This scale can also be applied to different discipline such as medical, engineering and law. The reliability and validity of subscale can be made by using other aspects of students' behavior. The present research only established one variable with relation to SWB i.e. student engagement, thus other variables such as personality, happiness, health, family could be tested.

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