

Social Media Analysis (SNA) using Online Students Opinions on Academic Determination in Higher Education

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Abstract

The purpose of this paper is to have a quantitative analytical study and to examine the theoretical basis of the Kember's student progress model that evaluates directly or indirectly effects of student's opinions in online environment by recognizing the relationships between variables such as online student's opinions, performance, cost-benefit analysis and student determination. Many researchers like Thomson, Harlow, Houle and Porta-Merida confirmed that effectiveness and dependability of the theory, but their results are meagerly dissimilar in the degree of influence on student opinions and also indicate that it could be useful and meaningful to re-analyze various components in more present research. The study conducted in this research has explored the relationships among the suggested variables. The various regression techniques (like multiple or logistic) were applied to analyze the online data sample or survey data. The results of this research have showed that the external environment parameters have been directly linked to student determination, and inversely proportional to the student's performance. Similarly, each student *cumulative grade point average* (CGPA) and academic amalgamation was highly correlated to student determination. The results of this research paper conveys the current phenomena and knowledge of online student academic determination. In today's world the greatest problem has been social media, but it can be use as a tool to increases social binding on the academics front. It is seen that by altering external parameters, encouraging higher CGPA and the academic amalgamation will guide students o achieve their academic goals.

KEYWORDS: Student Determination (SE); Retention; Opinions; Online Students (Og); Higher Education (HE); Higher Education Institutions (HEI's); Cumulative Grade Point Average (CGPA); Social Binding; Academic Binding (AB); External Environment Parameters(EEP)

1. INTRODUCTION

Student determination is an important factor for both students and Higher Education Institutions (HEI's) because it affects in achieving students' education goals and also financially sustaining the HEI's goals. The purpose of this paper is to test and examines the theoretical basis of Kember's [1] student progress model which evaluated the direct or indirect effects of student determination on their successful completion of their graduation degree programs. Nichols [2] proved that student's motivation is a crucial factor in evaluating their determination in completing their academic programs.

Spady [3] had given the empirical and theoretical model of student determination. Later on Tinto [4], in his research edited Spady's model to explored the dropout rate

behavior. Bean & Metzner [5] claimed in their conceptual model that the Tinto model is less appropriate where social binding with friends and professional educators is constrained by the time factor in a classroom and the students which are non-traditional (i.e. which are not much used to computers) are badly affected by the parameters' governed by external environment, than by the social binding variables that affect wearing out of traditional students. Kember [1] had correlated his dropout model of student determination with the model of student progress as it relates to online student social binding (SB), academic amalgamation (AA), external environment parameters (EEP), and academic incompatibility (AI). Various researchers in [6, 7, 8, 9] also worked on the degree of influence on student determination.

We have done the qualitative study to analyze the bonding or relationships among student opinions in terms of student performance (SP), student progress factors, cost-benefits (CP), and student determination with the help of Kember's model of student progress. This study uses the Kember's model and try to analyze its fitness with online learning practices and what can be done to improve student determination.

2. The Proposed Research Questions

There are some research questions which need to be answered in this paper and on that basis null hypotheses and their alternative hypotheses are generated.

1) Is there any linking exist between student opinions of the academic experience with the a) social binding (SB), b) academic binding (AB), c) external environment parameters (EEP), and d) academic incompatibility with student determination (within the learning environment at the institutional level)? If relationship exists, then does it empirically alter with respect to student traits and learning skills and various styles?

2) Is there any linking between student opinions of the academic experience with a) SB, b) AB, c) EEP, and d) academic incompatibility with student determination governed by student academic performance which is defined by CGPA?

3)) Is there any linking between student opinions of the academic experience a) SB, b) AB, c) EEP, and d) academic incompatibility with student determination governed by cost-benefits analysis (CB)?

3. Background Literature

3.1 Student's Determination in Learning Environment

Kay [10] disclosed the fact that the development of distribution technology has spurred many HEI's to offer higher education. Similarly Tinto [4] had discussed various different factors related to student determination related to retention. Various other tools for the study of determination and persistence are the identification of predictors for institute – student achievement and retention. Many researchers like Farmer [11] studied about “*Academic Retention Indicators*”, he pointed out number of reasons given by students for non-persistence including effectiveness and quality of education. Barefoot [12] determined that the highest number of withdrawal is in the first year of graduation.

3.2 Linking of Social Academic Binding (SAB), External Environment Parameter (EEP), and Academic Incompatibility to Student's Determination

With the rise of in HEI's which is directly proportional to the number of students whose performance is poor in their respective courses or attrition rate, therefore lead to wastage of student's time and HEI's financial loss. Tinto [13] classical model of student leaving gives a valid reason for attrition. Heyman [14] disclosed the fact that students complete their courses at higher rate if they feel connected with their institutions and students those are connected socially fell less isolated as per Senhouse [15]. Woosley [16] experimented and found that the SAB positively affect student persistence and academic performance. Due to rapid increase in NET generation, there are many sources by which the social binding is possible. Kord [17] stressed on the pros and cons of online social networking on HEI' student's academic experiences and which will continue to help the students in more technical way. Vuong [18] , Brown-Welty & Tracz [19], they all believed that integration of social media and faculty interaction with peers are two important factors for academic success. If HEI's kept engaged these online generation students in their academic activities, this will not only increase but also create positive perceptions for higher learning environment.

3.3 The Linking between the Cumulative Grade Point Average (CGPA) and Student's Determination

Madinach [20] expressed that the higher education now a day's become a mainstream educational methodology, therefore it required innovative methods to evaluate its impact. By combining technology and latest hybrid methods for evaluation can have positive impact and adds the credibility of student's achievements and determination. The CGPA on student determination is significantly related to continuous enrollment and student determination was given by Porta-Merida [9]. Woosley [16] indicated that high level of social binding is directly linked to lower CGPA than academic integration, therefore leading to low academic performance caused due to disturbance from social influence.

3.4 Proposed Conceptual Framework –Basis for Theoretical Orientation

The progress model of student as suggested by Kember [1] is the fundamental basis for this study in Figure 1. He identified four constructs of student progress i) *Social Binding* (SB) (it is defined as the extent to which the family and friends supports starting from the student's registration till their persistence in the course i.e. moral support), ii) *academic Binding* (AB) (it includes all elements of contact between an HEI and the student's), iii) *external environment parameters (EEP)* (it encompasses negative social binding, insufficient time etc. and others factors which hinder its plan of study) and iv) *academic incompatibility* (it includes not only marks but overall student performance in their respective course). Tinto's model studied and discussed student's drop-out only where as Bean-Metzer's [22] theoretical model recommends several other direct or indirect variables that eventually effects student's determination.

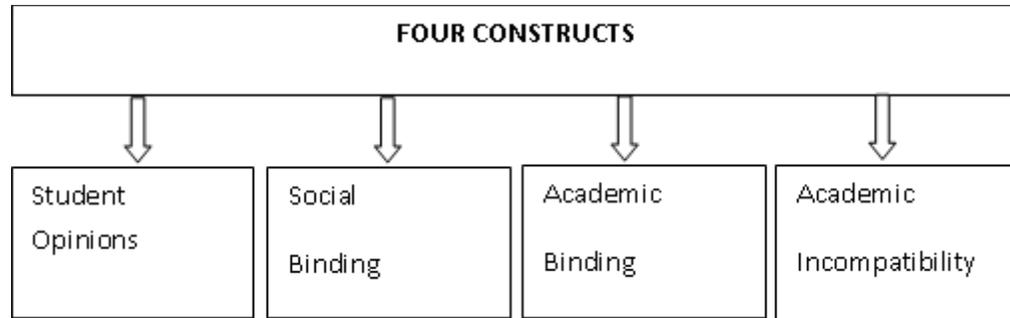


Figure 1: Kember’s [1] Student Progress Model –Basic

To prove research questions we alter the Kember’s framework in Figure 2 that depicts the pathway of the operational flow of the different variables in the conceptual model and shows how the measured variables affect the student determination. Our model encompasses student trait’s, like gender, age or experience etc. and also learning skills and styles..

4. Research Methodology

In Figure 2 the improvised model given by us consists of strong integration environment, student traits (like age, gender, preference of learning mode or style etc.), student performance (CGPA) , cost-benefit analysis (which is the method of choosing best option for the student by evaluating various factors like emotional, fiscal, and social benefits against the expected values) and student’s determination (we were taking into account the student opinions to study student determination in terms of enrolling in course, early drop –out or transfer cases etc.)

4.1 Research Design-Study Sampling and Population of HEI

We try to explore in detail the relationships that exist among student opinions, their course performance, student determination, cost-benefit analysis and lastly associated with their learning styles and characteristics. Cohen power [23] indicated that for the study sample should have two covariates, 4 independent variables and size should be minimum 97 ($\alpha=.05$). The dataset [27] consist of 800 students who enrolled for the odd semester computer sciences courses like graduation program and post-graduation program students of HEI. The study is to explore the relationship among student’s geographical traits, student determinations, student’s course performance, cost-benefits and students determination in association with the student learning styles at the institutions to verify the Kember model in this environment.

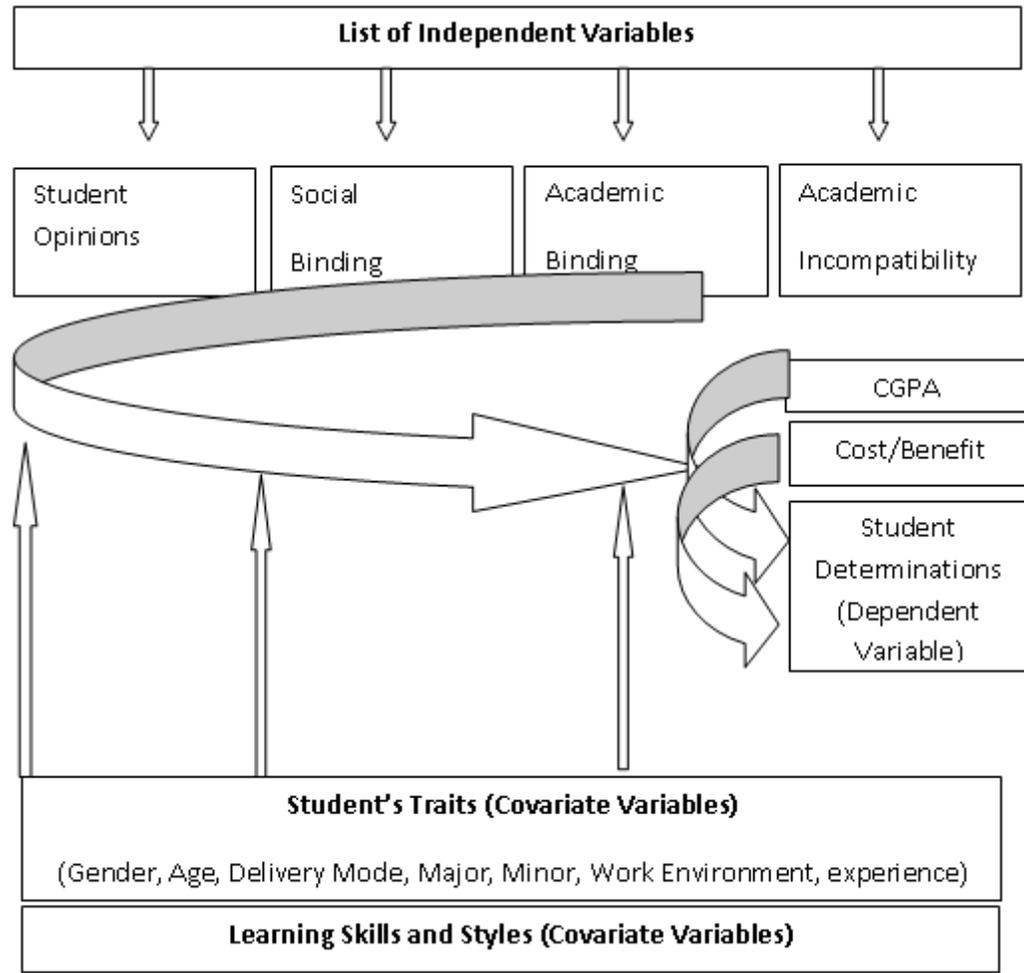


Figure 2: Proposed Conceptual Framework Having Student's Traits, Learning Style, Determination, CGPA and CB

The dataset [27] was collected and filtered. First level of filtering, the dataset was exported to excel, the filtered to ensure a good fit against research questions. Second level of filtering; provide us in detail the relationship to the mediator or exogenous variables of student traits: gender, age, class deliver mode student learning styles. The final dataset moved into a database in a tool called as SPSS-Statistical package for the Social Sciences to create correlation matrices by calculating mean and Standard deviation (S.D.) for each variable.

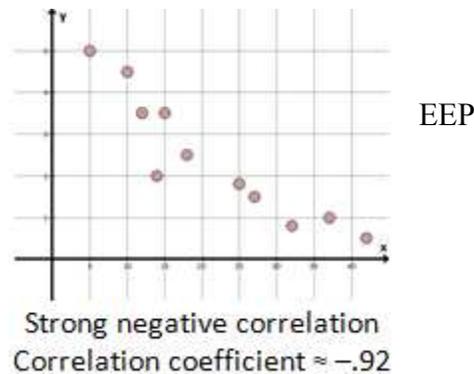
5. Data Analysis and Results Discussions

The various variables under this study were: i) Independent Variables: Social and Academic Binding (SAB), External Environment Parameter (EEP) and Academic Incompatibility, ii) Covariate Variable: Student's traits and learning styles, iii) Mediator Variable: Student Performance (c) and Cost-benefit (CB) analysis and iv) Dependent variable: Student Determination.

By doing bivariate analysis (it is one of the simplest forms of quantitative (statistical) analysis and involves the analysis of two variables (often denoted as X, Y), for the purpose of calculating the empirical relationship among them), we concluded that SAB, EEP, academic incompatibility, cost-benefit analysis (CBA), CGPA and other student's traits like age were also highly correlated with student determination.

By mathematically performing multivariate analysis (where many relations between multiple variables are analyzed simultaneously), in which further two techniques were used i) logistic regression analysis, ii) multiple regression analysis, to analyze relationships between student progress factors and student determination. To find out the solution for the first research question, this study incorporates logistic regression analysis for dichotomous variables to verify relationships among student opinions, student traits, learning styles and student determination. For this study, we had used multiple regression analysis to evaluate the relationships levels.

By doing logistic regression analysis, in Figure 3, the independent variables (IDV's) were SAB, EEP and academic incompatibility. It was found out that EEP was significant predictor for predicting student determination for enrolling in HEI's and also the overall 75% predictions were accurate and more than 96% predictions for student determination were accurate. EEP and academic incompatibility were the predictors for student determination of intent to enroll.



Student Determination and opinions

Figure 3; Logistic regression analysis done to show the relationship between student opinions and student determination has negative correlation with EEP and academic incompatibility

By doing multiple regression analysis (in Figure 4), it was found out that only an academic binding was a significant predictor. For the second question of proposed research question 1, EEP and prior online learning style were significant predictors for predicting student determination. To find the answer of the research question 2, the researcher measured intermediate effect to the relationship among student opinions and student determination. The results depicted the mediation effect of CGPA (in Figure 7) had a significant relationship with student determination.

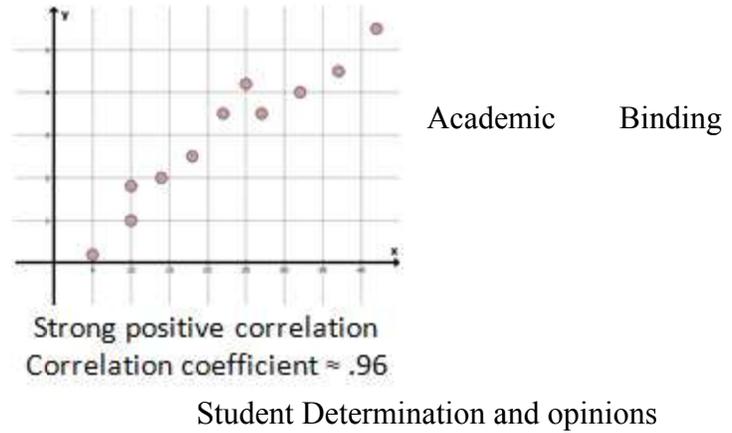


Figure 4 Multiple regression analysis done to show the relationship between student opinions and student determination has strong positive correlation with academic binding (AB)

To answer the research question 3 in Figure 5, the researcher measured mediation effect by CB to the relationship between student opinions and student persistence. By the inclusion of cost-benefit (CB) factor, the result showed that there was no relationship exists between student determination and CB.

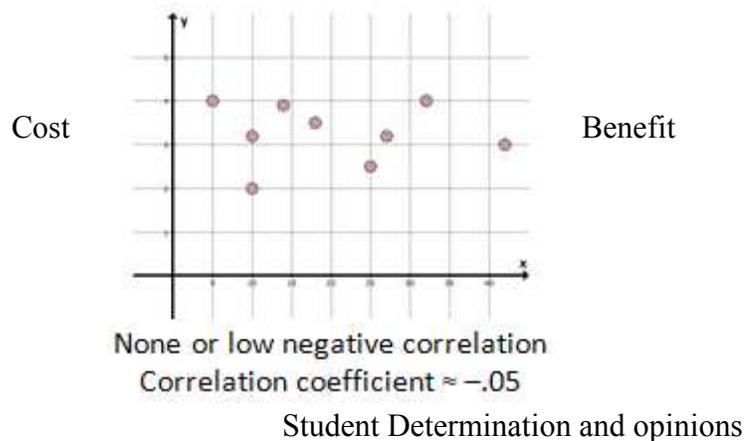


Figure 5: Multiple regression analysis done to show the relationship between student opinions and student determination has partial or no correlation with mediation effect of cost benefit (CB)

Finally, the study gave us the abstract picture with following results a) *EEP has a significant negative relationship with student determination*, b) *academic incompatibility and academic binding had a significant relationship with student determination*, c) *after*

controlling student traits *EEP* has a significant relationship (in Figure 6), *d*) *CGPA* had a little indirect effect (in Figure 7), *e*) *CB* doesn't have any indirect effect on the relationship between student opinions and student determination (in Figure 5).

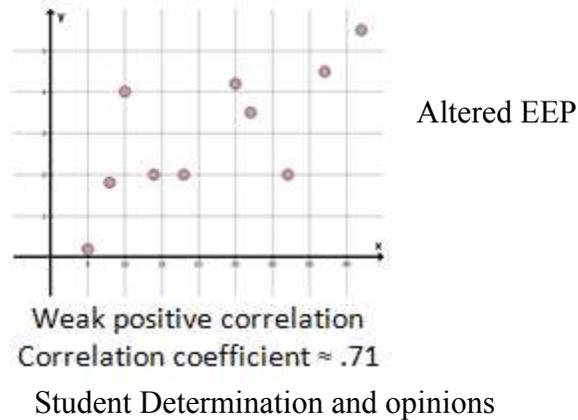


Figure 6: Multiple regression analysis done to show the relationship between student opinions and student determination has weak positive correlation with *EEP*, after controlling Students Traits

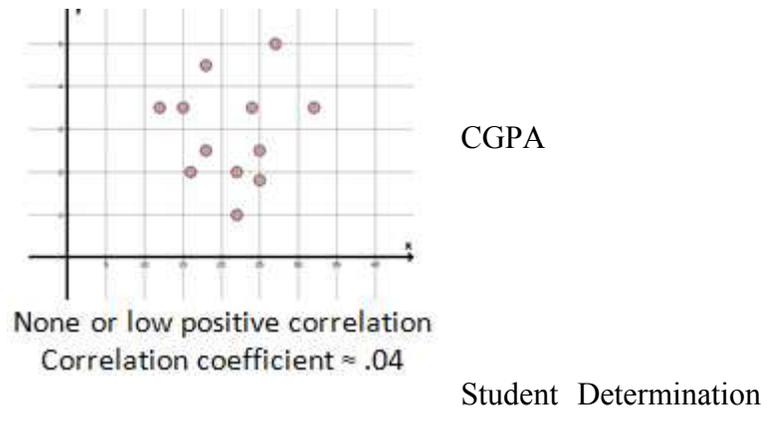


Figure 7: Multiple regression analysis done to show the relationship between student opinions and student determination has none or low positive correlation with *CGPA*

6. Recommendations

6.1 For Proposed Research Question 1

The *external environment parameters (EEP)* are the significant predictor to the student determination and also inversely related to his determination in achieving educational goals as stated by Kember [1] i.e. *lowering EEP will increase student determination*. The negatives values of the *EEP* is distractions, therefore lessening student's learning time and so retarding study. Also it had been found out that first year students entering college directly from high school are the representation of the online generation, so therefore, HEI's should replicate the same study culture or the same norms to increase

determination but should have positive influence. Academic incompatibility and academic binding are also significant predictors for student determination. Academic binding should be reinforced to motivate students e.g. increasing the quality and quantity of the postings in online discussions as stated by Jaing & Ting [24], focused feedback as by Filimban [25] and also giving tailored made programs suited to students so that it will increase their academic binding.

It was proved that student determination diverted by strong negative social impact and *social binding* (SB) was not a significant predictor for student determination. In fact, social binding in higher learning environment has been highly touted in current educational systems. Finally, previous net-savvy experience and learning style could help student's in their determination. Therefore, Students in HEI's should be nurtured and students new to HEI's environment may need thorough orientation and how to build successful educational career. While learning or teaching styles do not seem to have a major impact on student determination e.g. embedded video or audio may increase student determination.

6.2 For Proposed Research Question 2

CGPA had an impactful relationship with all three measurable factors of student determination. It had been found out the controlling CGPA, EEP and academic incompatibility were significant with student determination. Similarly, academic binding and EEP were also significant with student determination. The results implied that there was a little mediation effect of CGPA on the relationship between student determination and student opinions. The CGPA itself has a direct relationship with student determination. The research question has two partially rejected the null hypothesis of mediation of CGPA on relationship between student opinions and student determination. Our study did not support the Kember [1] student progress model, regarding the relationship between student opinions and CGPA, yet supported the relationship between CGPA and student determination. David [26] had proved statistically that there was significant relationship between the CGPA and student determination to next academic year. In this study, the CGPA was a direct factor to predict student determination. Therefore, the HEI's need to encourage students to achieve higher academic performance with good academic record and advice.

6.3 For Proposed Research Question 3

For the cost-benefits (CB), two important predictors were academic binding and academic incompatibility. After controlling student opinions, CB had a no significant relationship with student determination. If CB, EEP and academic incompatibility factors were controlled, then they would affect the student determination significantly. Kember [1] model supports the relationship between student opinions and student determination, but there was a significant relationship between academic binding, academic incompatibility and CB. Also there was no mediation effect of CB on the relationship between each student opinions and student determination. Stuart [27], explained that the students expected more the college in terms of benefits, as they invest huge fee amount.

Based on this notion, HEI's must need to work on student motivation related to academic front to improve their determination.

7. Implications and Interpretation

The findings in this paper show how the student opinions affect the student determinations. Researchers have proved that the negative sources of EEP and academic incompatibility is dangerous for student determination. Earlier social media networking was not in much demand as present world, so researcher like Kember [1] did not take into account social media phenomena. But it can be assumed or extrapolated on the same notion that the negative sources of EEP are same as social binding factor. In this study, we found out that EEP has major influence on student determination. Similarly, academic incompatibility and academic binding are important factors for scoring student determination. Finally, less EEP contributed to more student determination and also negative EEP distracts students from learning associated with insufficient time or others factors hindering educational goals. Reducing EEP for e.g. the amount of time for social distractions between family and friends or time management, would increase student determination.

Nowadays, because of the development of IT and more use of social media in education [28], many HEI's are now targeting on (SAB) social and academic integration for mentoring and increasing student motivation that leads to a successful e-learning environment. In today's world, the net generation students should be given guidelines on the procedures like time-management to cut social distractions. Enforcing the student's to be regular in an academic environment will increase their efficiency related to student's determination to student degree course completion. Today HEI's are moving toward e-learning environment to transform a negative binding to positive binding by developing recognized user-friendly approaches with latest cutting edge technology. In [29], it has been proved that HEI's are transforming the education through various performance indicators (one of them is social media or Internet).

Moreover, academic incompatibility gained one more score of student determination leading to HEI's more and more flexible and increases caring and loyalty by the students. Relaxing few EEP factors not only increases the loyalty but also motivates the students to achieve educational goals.

Another important predictor for student determination is the academic binding and peer interaction linking to academic exchange. Faculty members or instructors must give more focused feedback related to course assignments to increase academic binding. Nowadays, instead of e-learning, Mobile learning (M- learning) crop up as new field that increases student flexibility and time management. Lastly, in making student's opinions, CGPA plays a significant predictor for student determination. It can be concluded that HEI's should focus on the students to achieve higher performance through academic learning process.

8. Conclusion and Future Research

Our study examined and proposed new version of student's progress model in order to evaluate the direct or indirect effects of student's determination for successful completion

of their graduation or post graduation programs. Due to increase in social networking environment, the ample of social binding take place and have both negative effect on CGPA as well as a the positive effect on their retention. Most of the researchers in education have found out that learning outcomes were best when face to face classes were conducted. We have found out that the negative results for the EEP which can't be considered as the positivity of the social binding. Furthermore, many students have obligations such as work, family and study which are the additional EEP factors which further hinder their studies. Therefore, reducing negative impact of EEP helps the students to accomplish their educational goals based on the results of our study. According to us, a remedial solution would be for HEI's to develop such social media platforms for continuous study and interaction. Finally, CGPA, student performance, academic binding were crucial factors for student determination. We have concluded from the results that the relationships that exist between the CGPA and student determination was significant and plays an important role in student determination. It is proved that the increased use of social media as a resource to bind academic tasks with learning could increase student CGPA which result in continuation of the academic journey with improvised student retention and determination.

This paper is only shows the relationships that exists among student opinions and student determination by taking into account different variables that directly or indirectly effects student determination. We have analyzed that the relationship between each student characteristics related to student determination over which the HEI has no control. Also, the subjects of this study were only and only students who were taking admission in HEI's not others members like faculty, administrators or parents,. Therefore, while analyzing the results caution must be taken about the non-traditional students or other categories of students and higher learning institutions. In this case, feedback or responses are taken from college going students to meet their educational goals within the community and the college enjoyment. It is possible that this study can be used as initial point for understanding what others aspects may be predictable to other students in other part of the country and also for e-learning students having other values with respect to their education.

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