

Impact of Basic Psychological Need Satisfaction on Academic Burnout: A PLS-SEM Analysis

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Abstract. This study aimed to analyze how basic psychological need satisfaction influences academic burnout of students. Authors employed PLS-SEM analysis on 51 respondents gathered from a google form completed by undergraduate students in Faculty of Economics Universitas Negeri Medan. The finding suggests that basic psychological need satisfaction negatively and significantly influences students' academic burnout. From the results, we can conclude that basic psychological need satisfaction can prevent academic burnout. The finding gives insight for all stakeholder in university. We recommend faculty member to make an environment that can ignite basic psychological need satisfaction to reduce the possibility of students burnout.

Keywords: Basic psychological need satisfaction, academic burnout, PLS-SEM

1 Introduction

Mental health issues are often forgotten in student life. This is not surprising because lectures are often stressful for students and lead to a negative impact on psychological aspects and well-being [1–6]. However, even though the university has tried its best to prevent this, the attention given by the university is still relatively small. A better understanding of this problem can help students at the undergraduate level and lecturers to ensure the implementation of a stress-free education. Stress management is critical because various studies have shown that stress is the main predictor manifested in anxiety and depressive symptoms [7–11]. Another important issue is academic burnout [12–15]. However, mental health conditions have an essential role in the success of student lectures because if left in unfavorable conditions, it can impact academic achievement, work activities, social functioning, and overall quality of life at one point in their lives [16–21].

Burnout studies often only focus on people in the professional sector who usually deal with other people or require them to interact with many people (the fields of health, education, and social workers). Burnout refers to an experienced feeling of emotional exhaustion, with tendencies toward depersonalization and frequent feelings of low achievement [22–29]. However, these days, this concept has developed and touched on professions that are not only work-oriented that deal with other people. Not only that, but symptoms of burnout were also observed on a broader scope, such as sports and marriage [30,31,40–44],32–39]. In particular, various studies also show that burnout can also occur in students [45]–[47]. Indeed, students do not actually work, because instead of being paid, they actually pay the university in the form of tuition fees. However, what they do on a daily basis is actually similar to working

people, such as attending classes, sending assignments, whose responsibilities are not much different from work [12].

Academic burnout needs to be addressed for several reasons. The first is for the sake of further understanding student behavior in class in the learning process. Second, academic burnout can affect relationships with other people, whether it is with fellow students, lecturers, or others, both in the present and in the future. Third, the prevalence of burnout can affect the reputation of educational institutions, which ultimately determines the image of the university in the public eye [48].

One of the mental health problems that many students experience is exam anxiety, also known as test anxiety. This type of anxiety disorder is one of the problems in the academic world experienced by millions of students worldwide [49]. Referring to Bell [50], test anxiety is excessive anxiety that arises in a person's mind when they are doing a task, exam, or job being evaluated. Many underestimate the occurrence of test anxiety in students or students. Test anxiety can be a sign of the emergence of a disorder caused by a more severe anxiety disorder [51]. Although this type of anxiety will only occur when they are taking an exam or carrying out something being evaluated, the impact on academics is not trivial because by having test anxiety, students will experience learning difficulties and experience a downward trend in grades [49]. Of course, this is very unfortunate because their weakness in education is not a learning disability but caused by the test anxiety they experience.

Many things cause test anxiety, but according to Gold [52], burnout can occur due to the absence of an adequate support system. Basic Psychological Need Satisfaction is one of the most basic forms of a support system. Without adequate Basic Psychological Need Satisfaction, a person will easily experience psychological problems, such as frustration, to psychopathology [53]. That is why the level of Basic Psychological Need Satisfaction felt by a person can have implications for whether or not academic burnout occurs [54–56]. Previous research has proven that a person's high sense of Basic Psychological Need Satisfaction will reduce a person's risk of experiencing burnout [57,58]. According to Self-Determination Theory (SDT), fulfilling basic psychological needs for autonomy, competence and relatedness is the most decisive factor in shaping student development, enthusiasm and adaptive functions, such as intrinsic motivation and engagement [59]. However, current research is starting to shift by focusing on the basic psychological needs theory (BPNT) as a sub-theory of SDT.

In BPNT, there are several criteria that a person must achieve in order to obtain basic psychological needs. The first is that the satisfaction of this need must be associated with well-being. Second, it must detail experiences and behaviors that drive well-being. Third, it should be a significant and consistent mediator between social factors and personal, motivational, and psychological functioning. Fourthly, it should be able to grow and not become a deficit need that operates only when other basic psychological needs are frustrated. Fifth, it should be able to become a precursor to intrinsic motivation and apply universally to all people and cultures. [60].

People whose basic psychological sense is fulfilled will tend to be motivated to carry out their activities [61]. They will be more engaged in activities they find valuable or exciting and even create a sense of energy [62]. Conversely, people whose basic psychological needs are not met will experience a decrease in well-being due to a lack of motivation that drives their daily lives [58,62]. They will tend to avoid activities that have the potential to get them punished or rejected by others and only have activities that get them praise [58,62].

Based on the review of previous studies that have been carried out, this study will fill the research gap by examining the role of basic psychological need satisfaction in influencing academic burnout. Although the relationship between the two has been studied quite a lot, as

far as the authors examine, no one has discussed it in the context of the Indonesian sample, especially students in North Sumatra. This study has a research question: Is there an influence between Basic Psychological Need Satisfaction on Academic Burnout in Indonesian students?

2 Research Method

In general, data will be collected using a survey method using an electronic questionnaire. Electronic questionnaires are intended to reach students who are required to do online learning caused of the COVID-19 pandemic. The collected data will be tabulated and analyzed quantitatively to produce valuable information in translating phenomena. Sampling using the purposive sampling technique.

In measuring each variable, the researcher uses instruments developed by experts to ensure validity and reliability, both statistically and theoretically. The researcher used the Basic Psychological Needs Scale instrument developed by Ryan & Deci [63] to measure Basic Psychological Need Satisfaction. Next, the Academic Burnout variable was measured using the Oldenburg Burnout Inventory (OLBI) instrument. However, to adjust the context in the field of education, the researcher did not use the original version because the original version of this instrument measured burnout in the context of employees. That is why the researcher used the Oldenburg Burnout Inventory, which was adjusted by Reis et al. [14] so that it can be used in the field of education.

Data analysis in this study used Partial Least Square Structural Equation Modeling (PLS-SEM). Although covariance-based Structural Equation Modeling (CB-SEM) has dominated previous research to analyze complex interrelationships between observed and latent variables, in recent years, studies using PLS-SEM as an analytical tool have continued to increase, even surpassing CB-SEM [64]. In addition, PLS-SEM also tends to be chosen by researchers because PLS-SEM allows them to estimate complex models with many constructs, indicators, and structural paths without requiring data that is normally distributed [65].

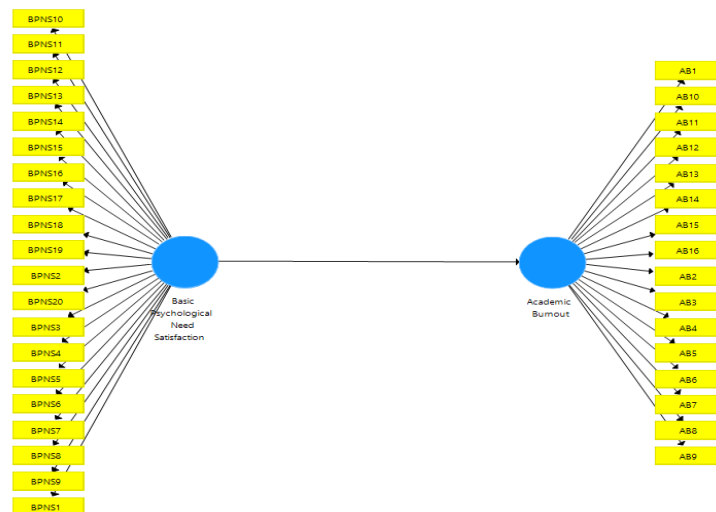


Fig. 1. Research Model

3 Result and Discussion

There are 50 respondents who participated in this study. Of the 50 respondents, nine respondents were male, and the remaining 41 were female (Table 1).

Table 1. Demography of sample based on gender

		Frequency	Percent
Gender	Male	9	18.0
	Female	41	82.0
	Total	50	100.0

This study seeks to answer whether Basic Psychological Need Satisfaction affects academic burnout. Table 2 shows that basic psychological need satisfaction is known to have a negative and significant impact on academic burnout, with $\beta = -0.595$, $p = 0.042$. In addition to the path coefficient, table 2 also shows the r-square model fit. It is known that the endogenous variable has a sufficient r square. The academic burnout variable has $r^2 = 0.354$. The complete summary of structural model results can be seen in Table 2.

Table 2. Summary of Structural Model Results

	Coefficient	Mean	Standard Deviation (STDEV)	T Values	P Values
Basic Psychological Need Satisfaction -> Academic Burnout	-0.595	0.084	0.652	0.912	0.042
r square					
Academic Burnout	0.354	0.433	0.087	4.054	0.000

4 Conclusion

This study proves that basic psychological need satisfaction negatively and significantly affects academic burnout. Based on these findings, it can be concluded that basic psychological need satisfaction is a critical variable that plays a role in mitigating academic burnout among students. Without adequate basic psychological need satisfaction, students are very vulnerable to experiencing academic burnout. This situation, of course, will have a harmful impact if it is ignored because in addition to worsening learning achievement, it can also damage students' mental health in the long term.

Thus, there are several suggestions from researchers to prevent academic burnout. The first is the need for student awareness of the importance of basic psychological need satisfaction. This means that the role of friends, family, and people is crucial in bringing about one's psychological satisfaction. Some people indeed prefer to be alone. However, even people who like to be alone still need some people to be near when needed to provide moral support. From the lecturer's perspective, the researcher also suggests paying attention to the condition of the students when they are in class. If it is found that there are students who are often

moody and aloof, the lecturer needs to communicate with these students and finally relate to the suggestions of further researchers, namely by activating the counseling services on campus. It is true that the majority of campuses in Indonesia already have counseling services. However, it is undeniable that many students are not aware of the existence of this unit. For this reason, it is necessary to "pick up the ball" for the counseling service to socialize their activities and whereabouts. Because their role is very crucial amid the pressures of student life.

Furthermore, the present study indicates that it is relevant to take into account the social environment of students. Teachers can give explicit support yet still challenging study environments to stimulate their students' need satisfaction. The way is to clarify if their tasks are necessary to foster their excellent, encouraging them to choose the academic activities that suit them, make them engage in projects their skills development, and provide them with proper resources [66]–[68]. From the side of fellow students, student's satisfaction can also be supported by encouragement and group interaction [69]. Jika ditarik lebih lanjut, teachers dapat mendukung student's need atas kompetensi dengan memberikan goal yang menantang, namun dapat dicapai, memberikan umpan balik positif agar proses pencapaian goals dapat terlihat, dan memberikan dukungan nyata [58], [70]. The need for relatedness can be met by showing acceptance, as well as showing understanding and wise consideration of students. It does not just stop at the teachers, but teachers must also encourage students to do the same for their friends too [71].

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References

- [1] Dyrbye, L.N., et al. (2006). Systematic review of depression, anxiety, and other indicators of psychological distress among US and Canadian medical students. *Acad. Med.*, vol. 81, no. 4, pp. 354–373
- [2] Siddique, C.M., & D'Arcy, C., (1984). Adolescence, stress, and psychological well-being. *J. Youth Adolesc.*, vol. 13, no. 6, pp. 459–473
- [3] Cole, N.N., et al. (2015). Predictor and moderator effects of ego resilience and mindfulness on the relationship between academic stress and psychological well-being in a sample of Ghanaian college students. *J. Black Psychol.*, vol. 41, no. 4, pp. 340–357.
- [4] Suleman, Q., et al. (2018). Relationship between perceived occupational stress and psychological well-being among secondary school heads in Khyber Pakhtunkhwa, Pakistan. *PLoS One*, vol. 13, no. 12, p. e0208143.
- [5] Pascoe, M.C., et al. (2020). The impact of stress on students in secondary school and higher education. *Int. J. Adolesc. Youth*, vol. 25, no. 1, pp. 104–112.
- [6] Li, Z.S., & Hasson, F. (2020). Resilience, stress, and psychological well-being in nursing students: A systematic review. *Nurse Educ. Today*, vol. 90, p. 104440.
- [7] Amutio, A., & Smith, J.C. (2007). The factor structure of situational and dispositional versions of the Smith Irrational Beliefs Inventory in a Spanish student population. *Int. J. Stress Manag.*, vol. 14, no. 3, p. 321.
- [8] Morrison, R., & O'Connor, R.C. (2005). Predicting psychological distress in college students: The role of rumination and stress. *J. Clin. Psychol.*, vol. 61, no. 4, pp. 447–460.

- [9] Flinchbaugh, C. L., et al. (2012). Student well-being interventions: The effects of stress management techniques and gratitude journaling in the management education classroom. *J. Manag. Educ.*, vol. 36, no. 2, pp. 191–219.
- [10] Hayes, D.M., et al. (1985). Stress management education: A life skills approach for health promotion professionals. *Wellness Perspect.*, vol. 2, no. 4, pp. 9–11.
- [11] Sorenson, R.D., (2007). Stress management in education: Warning signs and coping mechanisms,” *Manag. Educ.*, vol. 21, no. 3, pp. 10–13.
- [12] Lin, S.H., & Huang, Y. C. (2015). Life stress and academic burnout. *Act. Learn. High. Educ.*, vol. 15, no. 1, pp. 77–90. doi: 10.1177/1469787413514651.
- [13] Rahmati, Z. (2015). The study of academic burnout in students with high and low level of self-efficacy. *Procedia-Social Behav. Sci.*, vol. 171, pp. 49–55.
- [14] Reis, D., Xanthopoulou, D., & Tsaousis, I. (2015). Measuring job and academic burnout with the Oldenburg Burnout Inventory (OLBI): Factorial invariance across samples and countries. *Burn. Res.*, vol. 2, no. 1, pp. 8–18. doi: 10.1016/j.burn.2014.11.001.
- [15] Zhang, Y., Gan, Y., & Cham, H. (2007). Perfectionism, academic burnout and engagement among Chinese college students: A structural equation modeling analysis. *Pers. Individ. Dif.*, vol. 43, no. 6, pp. 1529–1540.
- [16] Patel, V., et al. (2007). Mental health of young people: a global public-health challenge. *Lancet*, vol. 369, no. 9569, pp. 1302–1313. doi: 10.1016/S0140-6736(07)60368-7.
- [17] Puskar, K.R., & Bernardo, L.M. (2007). Mental health and academic achievement: Role of school nurses. *J. Spec. Pediatr. Nurs.*, vol. 12, no. 4, pp. 215–223.
- [18] Suldo, S.M., et al. (2014). The impact of school mental health on student and school-level academic outcomes: Current status of the research and future directions. *School Ment. Health*, vol. 6, pp. 84–98.
- [19] Joe, S., Joe, E., & Rowley, L.L. (2009). Consequences of physical health and mental illness risks for academic achievement in grades K–12,” *Rev. Res. Educ.*, vol. 33, no. 1, pp. 283–309.
- [20] Wang, MT., & Sheikh-Khalil, S. (2014). Does parental involvement matter for student achievement and mental health in high school?. *Child Dev.*, vol. 85, no. 2, pp. 610–625.
- [21] Stewart, T., & Suldo, S. (2011). Relationships between social support sources and early adolescents’ mental health: The moderating effect of student achievement level. *Psychol. Sch.*, vol. 48, no. 10, pp. 1016–1033.
- [22] Maslach, C., Schaufeli, W. B., & Leiter, W. P. (2001). Job burnout. *Annu. Rev. Psychol.*, vol. 52, no. 1, pp. 397–422.
- [23] Fiorilli, C., et al. (2017). School burnout, depressive symptoms and engagement: Their combined effect on student achievement. *Int. J. Educ. Res.*, vol. 84, pp. 1–12.
- [24] Madigan, D. J., & Curran, T. (2021). Does burnout affect academic achievement? A meta-analysis of over 100,000 students. *Educ. Psychol. Rev.*, vol. 33, pp. 387–405.
- [25] Romano, L., et al. (2021). The effect of students’ perception of teachers’ emotional support on school burnout dimensions: longitudinal findings. *Int. J. Environ. Res. Public Health*, vol. 18, no. 4, p. 1922.
- [26] Watts, J., & Robertson, N. (2011). Burnout in university teaching staff: A systematic literature review. *Educ. Res.*, vol. 53, no. 1, pp. 33–50.
- [27] Weckwerth, A.C., & Flynn, D.M. (2006). Effect of sex on perceived support and burnout in university students. *Coll. Stud. J.*, vol. 40, no. 2.
- [28] Uludag, O., & Yaratana, H. (2010). The effect of burnout on engagement: An empirical study on tourism students. *J. Hosp. Leis. Sport. Tour. Educ.*, vol. 9, no. 1, p. 13.
- [29] Stoliker, B. E., & Lafreniere, K. D. (2015). The influence of perceived stress, loneliness, and learning burnout on university students’ educational experience. *Coll. Stud. J.*, vol. 49, no. 1, pp. 146–160.
- [30] Schaufeli, W. B., et al. (2002). Burnout and engagement in university students a cross-national study. *J. Cross. Cult. Psychol.*, vol. 33, no. 5, pp. 464–481. doi:10.1177/0022022102033005003.
- [31] Rotella, R. J., Hanson, T., & Coop, R. H. (1991). Burnout in youth sports. *Elem. Sch. J.*, vol. 91, no. 5, pp. 421–428.

- [32] Gustafsson, H. (2007). *Burnout in competitive and elite athletes*. Örebro: universitetsbibliotek.
- [33] DiFiori, J. P., et al. (2014). Overuse injuries and burnout in youth sports: a position statement from the American Medical Society for Sports Medicine. *Br. J. Sports Med.*, vol. 48, no. 4, pp. 287–288.
- [34] Goodger, K., et al. (2007). Burnout in sport: A systematic review. *Sport Psychol.*, vol. 21, no. 2, pp. 127–151.
- [35] Gustafsson, H., Hancock, D. J., & Côté, J. (2014). Describing citation structures in sport burnout literature: A citation network analysis. *Psychol. Sport Exerc.*, vol. 15, no. 6, pp. 620–626.
- [36] Reinardy, S. (2006). It's gametime: The Maslach Burnout Inventory measures burnout of sports journalists. *Journal. \& Mass Commun. Q.*, vol. 83, no. 2, pp. 397–412.
- [37] Pamuk, M., & Durmucs, E. (2015). Investigation of burnout in marriage. *J. Hum. Sci.*, vol. 12, no. 1, pp. 162–177.
- [38] Pines, A. M. (1987). Sex differences in marriage burnout. *Isr. Soc. Sci. Res.*
- [39] Pines, A. M. 1987. Marriage burnout: A new conceptual framework for working with couples. *Psychother. Priv. Pract.*, vol. 5, no. 2, pp. 31–44.
- [40] Alsawalqa, R.O. (2019). Marriage burnout: When the emotions exhausted quietly quantitative research. *Iran. J. Psychiatry Behav. Sci.*, vol. 13, no. 2.
- [41] Nejatian, M., et al. (2021). Investigating the status of marital burnout and related factors in married women referred to health centers. *BMC Womens. Health*, vol. 21, pp. 1–9.
- [42] Rosenberg, T., & Pace, M. (2006). Burnout among mental health professionals: Special considerations for the marriage and family therapist. *J. Marital Fam. Ther.*, vol. 32, no. 1, pp. 87–99.
- [43] Sirin, H. D., & Deniz, M. (2016). The Effect of the Family Training Program on Married Women's Couple-Burnout Levels. *Educ. Sci. Theory Pract.*, vol. 16, no. 5, pp. 1563–1585.
- [44] Jie, L. Z., Hassan, S. A., & Zaremohzzabieh, Z. (2021). Relationships between Burnout, Resilience, and Self-Care among Marriage and Family Counsellors in Malaysia. *Pertanika J. Soc. Sci. \& Humanit.*, vol. 29.
- [45] Yang, H. J. (2004). Factors affecting student burnout and academic achievement in multiple enrollment programs in Taiwan's technical-vocational colleges. *Int. J. Educ. Dev.*, vol. 24, no. 3, pp. 283–301. doi: 10.1016/j.ijedudev.2003.12.001.
- [46] Balogun, J. A., et al. (1996). Academic performance is not a viable determinant of physical therapy students' burnout. *Percept. Mot. Skills*, vol. 83, no. 1, pp. 21–22.
- [47] Chang, E. C., Rand, K. L., & Strunk, D. R. (2000). Optimism and risk for job burnout among working college students: Stress as a mediator. *Pers. Individ. Dif.*, vol. 29, no. 2, pp. 255–263.
- [48] Neumann, Y., Neumann, E. F., & Reichel, A. (1990). Determinants and consequences of students' burnout in universities. *J. Higher Educ.*, vol. 61, no. 1, pp. 20–31.
- [49] Maralani, F. M., Lavasani, M. G., & Hejazi, E. (2016). Structural Modeling on the Relationship between Basic Psychological Needs, Academic Engagement, and Test Anxiety. *J. Educ. Learn.*, vol. 5, no. 4, p. 44. doi: 10.5539/jel.v5n4p44.
- [50] Bell, H. (2010). Test anxiety. *Minnesota medicine*, vol. 93, no. 11, Boston, MA: Springer US, pp. 24–28.
- [51] Beidel D. C., & Turner, S. M. (1988). Comorbidity of test anxiety and other anxiety disorders in children. *J. Abnorm. Child Psychol.*, vol. 16, no. 3, pp. 275–287. doi: 10.1007/BF00913800.
- [52] Gold, Y. (1984). Burnout: A major problem for the teaching profession.. *Education*, vol. 104, no. 3.
- [53] Vansteenkiste, M., & Ryan, R. M. (2013). On psychological growth and vulnerability: Basic psychological need satisfaction and need frustration as a unifying principle. *J. Psychother. Integr.*, vol. 23, no. 3, pp. 263–280. doi: 10.1037/a0032359.
- [54] Cho, E., & Jeon, S. (2019). The role of empathy and psychological need satisfaction in pharmacy students' burnout and well-being. *BMC Med. Educ.*, vol. 19, no. 1, pp. 1–12. doi: 10.1186/s12909-019-1477-2.
- [55] Curran, T., et al. (2013). The mediating role of psychological need satisfaction in relationships between types of passion for sport and athlete burnout. *J. Sports Sci.*, vol. 31, no. 6, pp. 597–606.

- [56] Perreault, S., et al. (2007). Does it take three to tango? Psychological need satisfaction and athlete burnout. *Int. J. Sport Psychol.*
- [57] Deci, E. L., et al. (2001). Basic psychological needs scales. *Within-Journal Personal. Soc. Psychol.*, vol. 11, no. 1993, pp. 175–187.
- [58] Van den Broeck, A., et al. (2008). Explaining the relationships between job characteristics, burnout, and engagement: The role of basic psychological need satisfaction. *Work Stress*, vol. 22, no. 3, pp. 277–294. doi: 10.1080/02678370802393672.
- [59] Ryan, R. M., & Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness*. Guilford Publications.
- [60] Benlahcene, A., Kaur, A., & Hashim, R. A. (2020). Basic psychological needs satisfaction and student engagement: the importance of novelty satisfaction. *J. Appl. Res. High. Educ.*, vol. 13, no. 5, pp. 1290–1304. doi: 10.1108/JARHE-06-2020-0157.
- [61] Vansteenkiste, M., Lens, W., & Deci, E. L. (2006). Intrinsic versus extrinsic goal contents in self-determination theory: Another look at the quality of academic motivation. *Educ. Psychol.*, vol. 41, no. 1, pp. 19–31.
- [62] Lens, W., et al. (2006). *Motivation: About the " why" and " what for" of human behavior*. International conceptual history of psychology. Hove, UK: Psychology Press.
- [63] Ryan, R. M., & Deci, E. L. (2000). The Darker and Brighter Sides of Human Existence: Basic Psychological Needs as a Unifying Concept. *Psychol. Inq.*, vol. 11, no. 4, pp. 319–338. doi: 10.1207/S15327965PLI1104_03.
- [64] Hair Jr, J. F., et al. (2016). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage publications.
- [65] Hair Jr, J. F., et al. (2019). When to use and how to report the results of PLS-SEM. *Eur. Bus. Rev.*, vol. 31, no. 1, pp. 2–24. doi: 10.1108/EBR-11-2018-0203.
- [66] Ryan, R. M., & Deci, E. L. (2000). Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions. *Contemp. Educ. Psychol.*, vol. 25, no. 1, pp. 54–67. doi: 10.1006/ceps.1999.1020.
- [67] Mann, S., & Robinson, A. (2009). Boredom in the lecture theatre: An investigation into the contributors, moderators and outcomes of boredom amongst university students. *Br. Educ. Res. J.*, vol. 35, no. 2, pp. 243–258.
- [68] Niemiec, C. P., & Ryan, R. M. (2009). Autonomy, competence, and relatedness in the classroom: Applying self-determination theory to educational practice. *Theory Res. Educ.*, vol. 7, no. 2, pp. 133–144.
- [69] Filak, V. F., & Sheldon, K. M. (2003). Student psychological need satisfaction and college teacher-course evaluations. *Educ. Psychol.*, vol. 23, no. 3, pp. 235–247.
- [70] Locke, E. A. (2003). Motivation to conscious goal setting. *Motiv. Work Behav.*, pp. 113–125.
- [71] Sulea, C., et al. (2015). Engagement , boredom , and burnout among students : Basic need satisfaction matters more than personality traits ☆. *Learn. Individ. Differ.*, vol. 42, no. 4, pp. 132–138. doi: 10.1016/j.lindif.2015.08.018.