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Research Paper / Article / Review

# Fitting in or standing out? A study on undergraduate students' social adjustment level

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Abstract: Student success and well-being depend heavily on social adjustment because it determines how well students perform in educational settings. So, this study investigated how undergraduate students adjust in social settings. The study also aimed to identify the gender differences in social adjustment and the differences between learners of the regular mode and the Open & Distance Learning (ODL) mode. The research adopted a quantitative method, which was implemented through descriptive surveys. The research instrument consisted of 20 items in the custom questionnaire that was developed following Bell's Adjustment Inventory framework. Results showed that a favourable level of social adjustment existed among 10% of students, yet 76.25% of students demonstrated a moderately favourable level, while 13.75% of students presented an unfavourable level of adjustment. Gender, along with Regular or ODL learning methods, did not result in significant differences between groups. The findings suggest that while most students manage to maintain a moderate level of social adjustment, a considerable proportion still face challenges. This underscores the importance of creating supportive academic and social environments that can strengthen students' overall adjustment and well-being.

**Key Words:** Social adjustment; UG students; regular students; ODL students; supportive academic and social environments.

#### 1. INTRODUCTION

Social adjustment describes the manner through which individuals teach themselves to join their surrounding social setting (Ansary, 2023). Social adjustment demands that students learn accepted cultural conventions as they improve their social connections while becoming familiar with their new circumstances. Social adjustment plays a crucial role in the educational development of students enrolled in higher education. Higher education students encounter new environments alongside fresh people and multiple hurdles when they transition from high school to college or university, according to Lalchhuanawma et al. (2020). Social adjustment abilities determine how well students overcome campus experiences and accomplish their goals. Appealing to students, the process involves two main achievements: developing connections with peers along with preserving harmonious relationships within their peer group and settling into their new environment comfortably. Understanding the rules and expectations that belong to their new environment is among the key aspects (Patial & Patial, 2023). Studying how to engage properly with faculty members, alongside participation in team tasks, and developing time management skills are essential skills for students. Social adjustment goes beyond basic conformity because it means obtaining comfort and receiving backing when entering new locations. Expansion into a new social environment produces both uplifting feelings and demanding circumstances. Students arrive at university with diverse lifestyles because they possess different ethnic origins and life experiences. Several unique backgrounds become an obstacle for specific students to transition smoothly (Mal, 2023). The behavioural type of a shy or introverted student creates obstacles when it comes to social bonding. The challenge of adapting to a new country becomes more burdensome for international students due to communication struggles and contrasting social customs. Most students eventually learn to adjust themselves after dedicating sufficient time to their adjustment process. Students become involved in clubs while participating in school events, which helps them develop social relationships. Students develop feelings of connection and acceptance through various activities, according to Savka et al. (2023). Students

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consider social acceptance as a highly important asset. Students who experience acceptance develop happiness alongside confidence and motivation, according to Garrote et al. (2020). The acceptance from others allows students to maintain better mental health and diminish their experiences of loneliness and stress. Their academic performance shows improvement because of social acceptance. The inability to socially adjust leads students to develop multiple additional issues. Students with adjustment difficulties commonly experience feelings of depression together with loneliness, and anxiety. Student performance as well as goal achievement suffers when negative emotional states disrupt their attention to studies (Razgulin et al., 2023). The lack of social adjustment sometimes triggers severe issues, which include school withdrawal and mental illness. The experience of feeling isolated makes students resort to self-harming conduct, which ranges from unwillingness to participate in academics to drug use and complete social withdrawal (Bhat & Basu, 2021). Long-lasting impacts emerge from these problems, which affect both their personal life and their career paths. Social adjustment research among students offers critical value because of multiple key reasons. The study provides insight into student difficulties that emerge during their transition to higher education. The identification of these issues enables us to create approaches that aid student success. Knowledge of social adjustment serves to demonstrate both the role of education in mental health and student well-being (Ali et al., 2018). Socially adjusted students demonstrate better happiness alongside better health; therefore, they attain higher academic outcomes and superior life quality (Packiaselvi & V.A., 2017). A social adjustment focus allows us to develop an environment that better supports all students. According to Fujiwara et al. (2023), social competencies match the importance of academic abilities during modern times. When hiring candidates, employers typically seek candidates competent in interpersonal teamwork and effective communication and adaptable to daily changes. When skills development for students is focused on, we help prepare them for success regardless of their career path or personal life goals.

#### 1.1 Rationale of this study

Students need satisfactory social adjustment for their academic success because it enables their interaction and adaptation to different social settings. UG students experience various challenges, which consist of difficulties with peer relationships, along with academic stress and issues with personal development that affect their social adjustment. The assessment of social adjustment levels in students becomes crucial for educators and policymakers, and counsellors to deliver sufficient support measures. Research about the social adjustment of UG students in Nadia district remains scarce. So, this research focuses on understanding student challenges that occur in social environments because previous investigations lack this information. The research findings will provide specific areas of focus that will assist in designing strategic initiatives and interventions for bettering students' social bonds and academic outcomes.

#### 2. Review of related literature

Social adjustment plays a crucial role in students' well-being and academic success. Several studies have explored different aspects of social adjustment, focusing on factors such as school environment, gender differences, peer influence, academic adjustment, and socioeconomic status. Sari, D. P., Syahniar, S., & Karneli, Y. (2020) studied the level of social adjustment of students in the school environment to prevent brawls. Their objective was to examine how well adolescents adjust socially in schools and identify their challenges. The study, conducted with 140 students from SMK Negeri Padang, used the Social Adjustment Scale (SPS) and found that 50.7% of students had low social adjustment, indicating difficulties in adapting. Ali, A., Ahmad, M., & Khan, S. (2018) explored the relationship between social and academic adjustments among BS students at the University of Sargodha, revealing that most students had a moderate level of both, with males demonstrating better social adjustment than females. Self, M. J., & Stowers, N. A. (2022) analysed social adjustment in college student-athletes, finding that non-athletes (94.79) adjusted better than athletes (87.38), and females (91.48) had better social adjustment than males (88.81). Kaur, R., & Sharma, S. G. (2022) examined gender differences in social adjustment and interpersonal support among undergraduates in Punjab, India, and found that males had better social adjustment than females. Raihani, U., Yarni, L., Santosa, B., & Putra, D. P. (2024) studied the impact of peer environments on social adjustment, finding that it accounted for 17.3% of students' social adjustment variance. Lalchhuanawma, D., Lalzarmawii, F., &Fanai, L. (2020) compared social adjustment between male and female college students, concluding that both genders were equally adjusted in most areas except educational adjustment. Junilia, E., & Dharmawan, A. K. (2023) examined the relationship between sensory integration and social adjustment in elementary students, finding a strong correlation (r=0.676, p>0.05). Parker et al. (2022) investigated the influence of school socioeconomic status (SES) on children's social adjustment, revealing that higher SES schools improved prosocial behaviour and reduced peer problems. Parveen, A., Anwar, A., & Ahmad, M. (2024) analysed the impact of parental education on girls' social adjustment at the secondary level, finding that most girls had high social adjustment, with only 1% reporting low adjustment. Talluri, S. (2023) studied social adjustment and academic achievement among 8th-grade students in Guntur District, revealing no significant differences in social adjustment based

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on demographics. These studies highlight various factors affecting social adjustment, including gender, peer environment, socioeconomic background, and parental education.

## 3. Objectives

- 1. To explore UG students' social adjustment level in regards to their Gender and Mode of Learning.
- 2. To find out the difference in social adjustment level, if any, between male and female UG students.
- 3. To find out the difference in social adjustment level, if any, between learners of the regular mode and Open & Distance Learning (ODL) mode.

## 3.1 Hypotheses

 $H_01$ : There is no significant difference in social adjustment level between male and female UG students.

H<sub>0</sub>2: There is no significant difference in social adjustment level between learners of the regular mode and Open & Distance Learning (ODL) mode.

 $H_03$ : There is no significant difference in social adjustment level between male learners of the regular mode and male learners of (ODL) mode.

 $H_04$ : There is no significant difference in social adjustment level between female learners of the regular mode and female learners of (ODL) mode.

H<sub>0</sub>5: There is no significant difference in social adjustment level between male learners of the regular mode and female learners of the regular mode.

H<sub>0</sub>6: There is no significant difference in social adjustment level between male learners of Open & Distance Learning (ODL) mode and female learners of Open & Distance Learning (ODL) mode.

#### 4. Methodology

The present research relied on a quantitative approach through the descriptive survey method to investigate undergraduate students' social adjustment scores in Nadia district. The principal research variable in this analysis was adjustment level among other binary and categorical variables, which included Gender types (Male and Female) and Mode of learning (Regular and Open and Distance Learning). The study considered all undergraduate students in Nadia district as the population from which 400 students were taken as a sample through a stratified random sampling technique. The entire sample consists of 100 regular male students, 100 ODL male students, 100 regular female students, with 100 ODL female students. The collected data were analyzed through descriptive statistical methods (frequency distribution and percentage analysis) and inferential statistical methods (t-test).

#### 5. Data collection tool

The researcher used and modified Bell's Adjustment Inventory (Ojha, 2006) to create an evaluation instrument suitable for the current study. Twenty evaluation items were included in the questionnaire for examining various dimensions of social adjustment. The options for the questions were either "yes", denoting adjustment issues or "no", denoting no such adjustment problems. A set of valued social adjustment domains formed the basis of the questionnaire, using its 20 items to research interpersonal connections and environmental adaptability, along with emotional well-being and social engagement. After the initial try-out and expert review, it was confirmed that the instrument had appropriate content with its selected items.

## 6. Data analysis and interpretation

Table 1: Level of social adjustment of Undergraduate students

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Level of Adjustment	All (n=400)		Male (n=200)		Female (n=200)		Regular (n=200)		ODL (n=200)			
	f	%	f	%	f	%	f	%	f	%		
Favorable	40	10	21	10.5	20	10	23	11.5	18	9		
Moderately favorable	305	76.3	149	74.5	155	77.5	148	74	156	78		
Unfavorable	55	13.8	30	15	25	12.5	29	14.5	26	13		

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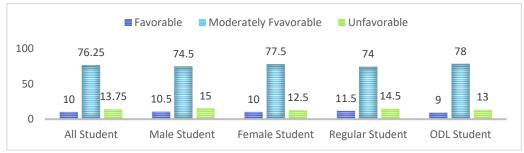


Figure 1: Level of social adjustment of Undergraduate students

Table 1, as well as Figure 1, indicate the level of social adjustment of Undergraduate students. From Table 1, it is evident that 10 percent of the total students have a favourable level of adjustment, 76.25 percent have a moderately favourable level, and 13.75 percent have an unfavourable level of social adjustment.

Among male students, 10.5 percent have a favourable level of adjustment, 74.5 percent have a moderately favourable level, and 15 percent have an unfavourable level of adjustment. In the case of female students, 10 percent have a favourable level of adjustment, 77.5 percent have a moderately favourable level, and 12.5 percent have an unfavourable level.

When comparing regular and ODL (Open and Distance Learning) students, it is observed that 11.5 percent of regular students have a favourable level of adjustment, 74 percent have a moderately favourable level, and 14.5 percent have an unfavourable level. On the other hand, 9 percent of ODL students have a favourable level of adjustment, 78 percent have a moderately favourable level, and 13 percent have an unfavourable level of social adjustment.

Table 2: showing the difference in UG students' social adjustment level as per their gender and Mode of Learning.

Variable	Group	N	Mean	SD	df	t	P	Remarks
Gender	Male	200	9.79	3.13	398	1.0405	0.2988	Not
	Female	200	10.11	3.02				Significant
Mode of Learning	Regular	200	9.96	3.20	398	0.0649	0.9483	Not Significant
	ODL	200	9.94	2.95				8
Gender-	Male	100	9.89	3.49	198	0.4505	0.6528	Not
Mode of	Regular							Significant
Learning	Male ODL	100	9.69	2.74				
	Female	100	10.03	2.90	198	0.3742	0.7087	Not
	Regular							Significant
	Female ODL	100	10.19	3.15				
Mode of	Regular	100	9.89	3.49	198	0.3085	0.7580	Not
Learning-	Male							Significant
Gender	Regular	100	10.03	2.90				
	Female							
	ODL Male	100	9.69	2.74	198	1.1986	0.2321	Not
	ODL	100	10.19	3.15				Significant
	Female							

According to Table 2, the mean score of UG students' social adjustment level based on gender was 9.79 for male students and 10.11 for female students. The t-test value was 1.0405 with a p-value of 0.2988, which was not significant at the 0.05 level of significance. The findings showed that both male and female students had similar social adjustment scores. Hence, it is found that there is no significant difference between the mean score of UG students' social adjustment level regarding their gender. Further, the mean score of UG students' social adjustment level based on their mode of learning was 9.96 for Regular learners and 9.94 for ODL (Open and Distance Learning) learners. The t-test value was 0.0649 with a p-value of 0.9483, which was also not significant at the 0.05 level. As indicated by the t-test results, there is no statistically meaningful variation between Regular and ODL students' social adjustment levels. Similarly, among male

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students, the mean score for Regular learners was 9.89, while for ODL learners, it was 9.69. The t-test result was 0.4505 with a p-value of 0.6528, which was not significant at the 0.05 level. Thus, it can be stated that the social adjustment level of male Regular and male ODL students was not significantly different. Again, among female students, the mean score for Regular learners was 10.03, while for ODL learners, it was 10.19. The t-test value was 0.3742 with a p-value of 0.7087, which was not significant at the 0.05 level. Therefore, there is no significant difference between female Regular and female ODL students in terms of their social adjustment level. Moreover, comparing male and female students within the Regular mode, the mean score for male Regular students was 9.89, and for female Regular students, it was 10.03. The t-test value was 0.3085 with a p-value of 0.7580, which was not significant at the 0.05 level. Hence, no significant difference is found between male and female students of the Regular mode concerning their social adjustment level. Finally, comparing male and female students within the ODL mode, the mean score was 9.69 for male ODL students and 10.19 for female ODL students. The t-test value was 1.1986 with a p-value of 0.2321, which was not significant at the 0.05 level of significance. Thus, it can be concluded that there is no significant difference between male and female ODL students regarding their social adjustment level.

## 7. Discussion and Recommendation

The findings of the present study-namely, that the majority of undergraduate students exhibit a moderately favorable level of social adjustment, with only 10% having a favorable level and 13.75% having an unfavorable level, and that there are no significant differences in adjustment based on gender or mode of learning (Regular vs. ODL)-align with several and diverge from some previous studies reviewed in the literature. In agreement with the current results, the study by Lalchhuanawma, Lalzarmawii, and Fanai (2020) concluded that both male and female college students were similarly adjusted in most areas, which supports the present finding that there is no significant gender difference in the social adjustment levels of undergraduate students. Similarly, the research by Talluri (2023) found no significant differences in social adjustment based on demographic factors, which also aligns with the present study's conclusion that mode of learning does not significantly affect social adjustment. In contrast, studies by Ali, Ahmad, and Khan (2018), and Kaur and Sharma (2022) reported that male students demonstrated better social adjustment than females, which contradicts the current finding of no significant gender-based difference. Other studies provide partial relevance to the current research. For instance, Sari et al. (2020) found a high percentage (50.7%) of students with low social adjustment, while the present study observed only 13.75% with an unfavourable level, suggesting differences possibly due to contextual or population-specific factors. Studies such as those by Self and Stowers (2022), Junilia and Dharmawan (2023), and Parker et al. (2022), although valuable, focus on variables such as athletic participation, sensory integration, and socioeconomic status, which were not directly examined in the current study. Thus, while the current findings reinforce some of the existing literature, they also highlight contrasting patterns, especially concerning the notably low percentage of students with a favourable adjustment, suggesting a need for further investigation across diverse educational and sociocultural settings.

Improvement in the social adjustment of undergraduate students can be achieved through proactive steps implemented by institutions, alongside teachers together with parents. These suggestions focus on building supportive environments that will assist learners in better social adjustment.

- Peer mentoring programs should be promoted to help undergraduate students adjust to their social integration.
- The institution should enhance the availability of counselling support services for students experiencing difficulties with social adjustment.
- The introduction of various co-curricular and social events will promote student social interaction throughout the academic year.
- The organisation should conduct training programs that teach gender sensitivity to minimise preconceived notions among students and to build equitable social engagement.
- The institution should build virtual communities and schedule meets up specifically for Open and Distance Learning students to develop better social networks.
- New orientation programs should be initiated to incorporate social integration elements that will assist the students' adaptation process.
- The institution should motivate faculty members to support social connections by organising interactive group projects and group activities.
- The support from parents, together with local communities, should be sought to help students in their social adaptation.
- The confidence-building programmes should be initiated to build self-esteem and social skills without difficulty.

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## 8. Further Research Suggestions

The field requires more examination of the different aspects of social adjustment among the undergraduates. Promising researchers must study how academic stress affects social integration. There is also a wide scope to study the influence of social media upon social interactions and the comparison between urban and rural student adjustments. A time-based research design could monitor social adjustment patterns with specific attention given to cultural factors and student behaviour, changes over extended periods. The future study may also explore which combination of elements relating to family background can enhance students' participation in cocurricular activities. A study can also be conducted to explore the role of peers and psychological health conditions in the social adjustments of learners.

## 9. CONCLUSION

The research results showed that undergraduate students had primarily moderate social adjustment perceptions, but a minority presented either high or low adjustment scores. T-test statistics showed that social adjustment result scores between genders and different learning methods could not make any significant difference. Students experience similar social adjustment problems no matter which group they belong to due to gender differences or mode of learning. The problem of inadequate student adjustment requires immediate intervention from academic institutions, parents and educators because of the limited number of students who scored well. The study confirms earlier research findings by concluding that there is no significant demographic variability in social adjustment among students. So, future researchers should examine psychological, institutional and environmental elements that impact social adjustment because these can provide better academic support for student social integration and emotional resilience.

#### REFERENCES

- 1. Ansary, K. (2023). Social attitude and adjustment: A critical review. *Galore International Journal of Applied Sciences and Humanities*. <a href="https://doi.org/10.52403/gijash.20230104">https://doi.org/10.52403/gijash.20230104</a>
- 2. Lalchhuanawma, D., Lalzarmawii, F., &Fanai, L. (2020). A comparative study of social adjustment among males and females' college students with special reference to Govt. Zirtiri Residential Science College. *Journal of Emerging Technologies and Innovative Research*.
- 3. Mal, A. (2023). Social adjustment challenges of first-year students. *Advances in Higher Education and Professional Development Book Series*. <a href="https://doi.org/10.4018/978-1-6684-6961-3.ch010">https://doi.org/10.4018/978-1-6684-6961-3.ch010</a>
- 4. Savka, I. H., Savka, S., &Voytkevich, N. I. (2023). Social adaptation of international students in the conditions of training during COVID-19 pandemic. *Неонатологія, ХірургіяТаПеринатальнаМедицина*. <a href="https://doi.org/10.24061/2413-4260.xii.4.46.2022.2">https://doi.org/10.24061/2413-4260.xii.4.46.2022.2</a>
- 5. Garrote, A., Garrote, A., Felder, F., Krähenmann, H., Krähenmann, H., Schnepel, S., SermierDessemontet, R., & Moser Opitz, E. (2020). Social acceptance in inclusive classrooms: The role of teacher attitudes toward inclusion and classroom management. *Frontiers in Education*. https://doi.org/10.3389/FEDUC.2020.582873
- 6. Razgulin, J., Argustaitė-Zailskienė, G., & Smigelskas, K. (2023). The role of social support and sociocultural adjustment for international students' mental health. *Dental Science Reports*. <a href="https://doi.org/10.1038/s41598-022-27123-9">https://doi.org/10.1038/s41598-022-27123-9</a>
- 7. Bhat, K. A., & Basu, N. (2021). Home adjustment, school adjustment, and social adjustment of higher secondary school students: A review. <a href="https://doi.org/10.48175/IJARSCT-1889">https://doi.org/10.48175/IJARSCT-1889</a>
- 8. Ali, A., Ahmad, M., & Khan, S. (2018). Social and academic adjustment of the university students. *Global Social Sciences Review*, 3(3), 378–394. <a href="https://doi.org/10.31703/GSSR.2018(III-III).21">https://doi.org/10.31703/GSSR.2018(III-III).21</a>
- 9. Packiaselvi, P. P., & V.A, M. (2017). A study on social adjustment among higher secondary school students and its impact on their academic achievement in Coimbatore district. *International Journal of Research*. <a href="https://doi.org/10.29121/GRANTHAALAYAH.V5.I6.2017.2056">https://doi.org/10.29121/GRANTHAALAYAH.V5.I6.2017.2056</a>
- 10. Fujiwara, K., Nishimura, T., Murakami, T., &Fukuzumi, N. (2023). The relationship between social skills and school adjustment in junior high school students. *Japanese Journal of Psychology*. https://doi.org/10.4992/jipsy.94.21035
- 11. ab Ojha, (2006). Bell adjustment Inventory manual.Indian psychological coporation, Arga.
- 12. Sari, D. P., Syahniar, S., &Karneli, Y. (2020). The level of social adjustment of students to the school environment in preventing brawls. *International Journal of Advances in Computer Science and Communication Engineering*, *I*(2), 8–15. <a href="https://doi.org/10.24036/005338IJACCS">https://doi.org/10.24036/005338IJACCS</a>
- 13. Ali, A., Ahmad, M., & Khan, S. (2018). Social and academic adjustment of the university students. *Global Social Sciences Review*, 3(3), 378–394. <a href="https://doi.org/10.31703/GSSR.2018(III-III).21">https://doi.org/10.31703/GSSR.2018(III-III).21</a>
- 14. Self, M. J., & Stowers, N. A. (2022). Examining social adjustment of college student-athletes. *International Journal of Research Granthaalayah*, 10(1), 9–20. <a href="https://doi.org/10.29121/granthaalayah.v10.i1.2022.4419">https://doi.org/10.29121/granthaalayah.v10.i1.2022.4419</a>

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Monthly, Peer-Reviewed, Refereed, Indexed Journal with IC Value: 86.87

Volume - 11, Issue - 09, September - 2025



- 15. Kaur, R., & Sharma, S. G. (2022). Gender differences in social adjustment and interpersonal support among undergraduate students. International Journal of Bio-Resource and Stress Management, 13(1), 53-61. https://doi.org/10.23910/1.2022.2331
- 16. Raihani, U., Yarni, L., Santosa, B., & Putra, D. P. (2024). Students' social adjustment: Effects of the peer environment. Bukittinggi International Counselling Conference Proceeding. https://doi.org/10.30983/bicc.v1i1.90
- 17. Junilia, E., &Dharmawan, A. K. (2023). Sensory integration ability and social adjustment in elementary school students. <a href="https://doi.org/10.47679/202321">https://doi.org/10.47679/202321</a>
- 18. Parker, P. D., Sanders, T., Anders, J., Shure, N., Jerrim, J., Noetel, M., Parker, R., Ciarrochi, J., & Marsh, H. (2022). School socioeconomic status context and social adjustment in children. Developmental Psychology. https://doi.org/10.1037/dev0001463
- 19. Parveen, A., Anwar, A., & Ahmad, M. (2024). Impact of parents' education on social adjustment of girls students at the secondary level. Journal of Education and Social Studies, 5(2), 264-270. https://doi.org/10.52223/jess.2024.5207
- 20. Talluri, S. (2023). Social adjustment and academic achievement of secondary school students. NeuroQuantology, 20(1). https://doi.org/10.48047/nq.2022.20.12.nq77730