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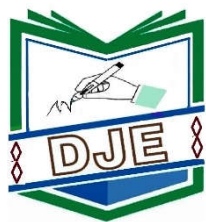
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**A PEER REVIEWED BI-ANNUAL JOURNAL OF DILLA
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Message from the Editor-in-Chief

I am pleased to introduce the release of Volume 2, Issue 1 of the *Dilla Journal of Education*, a peer-reviewed bi-annual publication of Dilla University. This issue presents a diverse collection of articles that delve into critical aspects of education within Ethiopia.

On behalf of the editorial board, I invite you to explore the research presented, which examines topics such as principals' leadership styles and their impact on teacher organizational commitment, predictors of risky sexual behavior among trainee teachers, the challenges and practices of teacher performance appraisal in primary schools, the repercussions of higher education reform on mathematics students, and perspectives on principal power in secondary schools. It is my hope that this issue provides valuable insights, stimulates further discussion, and encourages continued research within the Ethiopian education landscape. I encourage you to engage with these articles and contribute to the ongoing dialogue surrounding educational improvement.

Finally, I extend my sincere gratitude to the authors for contributing their valuable research, to the reviewers for their rigorous and insightful feedback, and to the dedicated members of the editorial team for their tireless efforts in bringing this issue to fruition. Your commitment to scholarly excellence is highly appreciated.

Daniel Gebretsadik (PhD, Associate Professor)

Editor-in-Chief

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Principals' Leadership Styles and Secondary School Teachers' Organizational Commitment in Ethiopia

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Abstract

This study set out to investigate the connection between principals' leadership styles and the organizational commitment of secondary school teachers in Ethiopia. A descriptive survey research method was applied, involving 287 teachers who were chosen through a multistage sampling procedure. Data were gathered using two established instruments: the Multifactor Leadership Questionnaire (MLQ) developed by Bass and Avolio (1997) to assess leadership practices, and the Organizational Commitment Questionnaire (OCQ) by Allen and Meyer (1990) to evaluate teachers' affective, continuance, and normative commitment. Analysis combined descriptive statistics with inferential techniques. The findings revealed that transactional leadership emerged as the dominant style among Ethiopian secondary school principals. Furthermore, both transactional and transformational leadership styles demonstrated significant positive relationships with the three dimensions of organizational commitment, while laissez-faire leadership was negatively associated with normative commitment. The study ends by highlighting the implications of these results and offering recommendations aimed at enhancing teachers' organizational commitment.

1 Introduction

1.1 Background

Across the globe, organizations continue to face challenges in fulfilling their objectives. Achieving these goals depends heavily on the contribution of employees, since even when institutions possess adequate resources such as finance, land, technology, time, and materials, they cannot succeed without effectively engaging their human capital (Gberevbie, 2017).

Several factors contribute to strengthening teachers' organizational commitment. These include innovative reward systems, access to employee benefits, favorable working conditions, alignment with institutional values, opportunities for professional development, recognition, and job satisfaction (Armstrong & Taylor, 2014; Popli & Rizvi, 2016). Among these, leadership has been con-

sistently highlighted as the central determinant of teachers' organizational commitment, with a strong link between a leader's approach and the level of staff dedication (Trottier, Van Mole, & Wang, 2008; Yasir, Imran, Irshad, Mohamad, & Khan, 2016).

In schools, principals are responsible for creating a positive and motivating environment for teaching and learning. They are tasked with transforming educational structures and routines in constructive ways, as well as guiding teachers to improve instructional processes. Effective educational leadership, therefore, is fundamental for achieving quality learning outcomes. According to Gracia-Spirits *et al.* (2008), school leadership exerts a deliberate and beneficial influence on the teaching-learning process. The smooth and effective functioning of schools often reflects the quality of leadership exercised by principals. Each school leader demon-

strates a unique style of collaboration and interaction with teachers, which shapes the climate of the institution.

Critics, however, note that authoritarian leadership styles often provoke negative reactions from teachers, reduce harmony, and create tension in school environments (Akinbode & Fagbohunde, 2012). Such approaches may lead to staff demotivation and a weakening of teachers' professional roles, sometimes resulting in disengagement from their institutions, even when they cannot immediately leave for alternative opportunities (Nasurdin, Ahmad, & Razalli, 2014).

Considerable attention has been directed to the relationship between leadership styles and teachers' responsibilities. Many studies on school leadership have identified different approaches that principals adopt in managing educational institutions (Kelly & MacDonald, 2019; Sudha, Shahnawaz, & Farhat, 2016; Yukl, 2013). The most widely applied framework is the Full-Range Leadership (FRL) model, which includes transformational, transactional, and laissez-faire leadership (Abasilim, 2014; Rehman, Shareef, Mahmood, & Ishaque, 2012; Rukmani, Ramesh, & Jayakrishnan, 2010). In parallel, organizational behavior studies recognize three core forms of employee commitment: affective, normative, and continuance (Othman, Mohammed, & D'Silva, 2013).

Research has further shown that transformational and transactional leadership generally enhance teachers' organizational commitment, while laissez-faire leadership tends to diminish it (Abasilim *et al.*, 2018a; Abasilim, Gbervbie, & Osibanjo, 2018b; Dariush, Choobdar, Valadkhani, & Mehrali, 2016; Fasola, Adeyemi, & Olowe, 2013; Garg & Ramjee, 2013; Wiza & Hlanganipai, 2014).

In summary, the leadership style exercised by school principals plays a critical role in shaping teachers' organizational commitment. Since different leadership approaches may influence teachers' responsibilities in varying ways, this study focused on the full range of leadership styles—transformational, transactional, and laissez-faire. Specifically, it sought to examine how principals' leadership practices affect the organizational commitment of sec-

ondary school teachers in Ethiopia, thereby addressing pressing challenges in schools and offering insights for improvement.

1.2 Statement of the Problem

Schools are the main organizations in the instructional framework. A central figure who has a significant degree of inspiration is expected to satisfy the objectives of the learning process. Researchers in organizational commitment show that principals play an extraordinary role in raising the responsibility of teachers (Aydin, Sarier, and Uysal, 2013). Principals perceive teachers' viability and proficiency as their top priorities when it comes to achieving school goals. The principal is responsible for everything that occurs in the school, and the way he or she works with the staff and interacts with them affects how satisfied the teachers are with their work and how they feel about their commitments to the school, to their profession, and teaching.

Moreover, a proficient and talented teacher is expected to accomplish school objectives. Be that as it may, how to use and prepare quality teachers matters. Enlisting, choosing, arranging, and setting representatives are, by all accounts, not the only basic issues for the accomplishment of school objectives. To use such assets, leadership style is the essential and most significant element for the ideal usage of the labor force, which is an impression of organizational responsibility.

As a result of different investigations by researchers, organizational commitment (OC) has crucial consequences for teachers and schools. According to Aydin, Sarier, and Uysal (2013), schools are moving toward structures in which rank denotes responsibility rather than authority, and the supervisor's goal is to convince rather than command. As a result, principals need to persuade their subordinates, colleagues, and superiors to support their goals and urge them to follow through with their decisions to be effective. Similarly, the organization must understand what factors have a significant impact on teacher dedication.

Furthermore, for a school to successfully implement plans, establish a competitive edge, and optimize human resources, leadership styles that foster teacher dedication are critical. As a result, if the

state of commitment is the functional product of the leadership style in existence, committed teachers are a crucial success factor for schools to reach their targeted goals. Leadership styles are also important for the school's effectiveness since they motivate teachers and communicate the school's strategic goals and policies (Keskes, 2014; Kelly & MacDonald, 2019).

Ethiopian secondary schools put a strong emphasis on delivering top-notch instruction, research, and development. The organizational culture, teacher-motivation strategies, and rules and regulations of these institutions are distinctive. A deeper understanding of the relationship between leadership styles and organizational commitment is required to develop a leadership style that would encourage and strengthen organizational commitment at the school level.

3,739 secondary schools in Ethiopia offer instruction. The main issues that secondary schools in the nation have had to deal with are low student academic achievement, high teacher turnover, a lack of motivation and commitment on the part of teachers, a lack of communication between school principals and the administrative and teaching staff, and high rates of dropout and repetition.

As a result, this article tried to address the following crucial questions:

1. What type of leadership style is most common in Ethiopian secondary schools?
2. How committed are secondary school teachers in Ethiopia?
3. How much do leadership styles influence teachers' commitment in Ethiopian secondary schools?

2 Literature Review

Ineffective leadership practices by school administrators can push teachers to resign from their positions. Studies have consistently demonstrated that transformational leadership exerts a strong and significant influence on teachers' organizational commitment, particularly when it comes to supporting change and reform initiatives. Principals

who adopt transformational approaches positively shape teachers' dedication and professional engagement. Implementing new educational policies in ways that align with teachers' behaviors requires the guidance of skilled and experienced school leaders. Indeed, successful schools are almost always led by principals capable of enhancing teacher loyalty and job satisfaction (Mowday, 1998; FDRE, 1994; Mottoh, 2015).

Transformational leaders affect organizational commitment by reinforcing the link between teachers' efforts and the attainment of educational goals, upholding shared values that support school missions, and fostering deeper personal commitment from both staff and leadership to the collective vision. Such leaders also encourage organizational loyalty by stimulating critical thinking, adopting creative strategies, involving teachers in decision-making, and demonstrating appreciation for individual needs so that each teacher can realize their potential (Keskes, 2014).

In contrast, transactional leadership has generally shown weak or no significant association with organizational commitment. Hayward, Goss, and Tolmay (2004) reported that transactional leadership did not meaningfully relate to affective, normative, or continuance commitment. Their study further indicated that transformational leadership is more effective than both transactional and laissez-faire styles in cultivating teacher commitment. A substantial body of empirical and meta-analytic research confirms this close relationship between transformational leadership and organizational commitment, noting that individuals led by transformational leaders tend to show stronger attachment to their organizations and reduced withdrawal behaviors (Yukl, 2013).

Teacher commitment is also widely recognized as a determinant of student achievement and overall school effectiveness. Within the broader organizational context, commitment is often categorized into three forms— affective, normative, and continuance (Meyer & Allen, 1990). However, in the educational domain, Singh and Billingsley (1998) identified three specific categories of teacher commitment: commitment to teaching, to students, and to the institution. Teachers with high levels of

commitment work persistently to uphold organizational values, display enthusiasm in their duties, and actively pursue the institution's objectives. Conversely, absenteeism, lateness, and high turnover among teachers are indicators of weak commitment. Ultimately, the leadership style of principals plays a decisive role in shaping how schools function and in determining the extent of teachers' organizational loyalty.

Conceptual Framework

The Full Range Leadership (FRL) and Organizational Commitment (OC) models created by Bass and Avolio (1985) and Meyer and Allen (1990), respectively, were synchronized and modified for this study. With the use of the MLQ and OCQ, the FRL and organizational commitment (OC) were researched to assess the effect of principals' leadership styles on teachers' commitment in Ethiopian secondary schools. The link between FRLS and OC dimensions is depicted in the diagram.

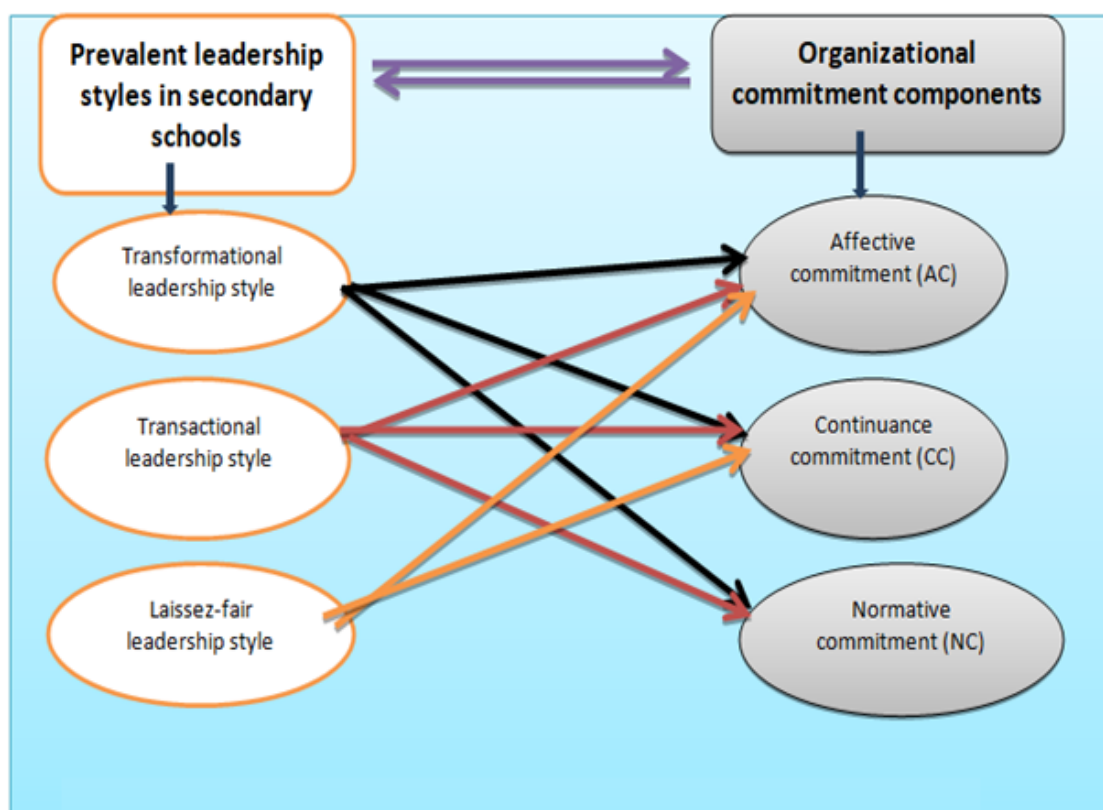


Figure 1: Conceptual framework of the study

3 Research Design and Method

3.1 Research design

This study employed a descriptive survey design. Such a design is primarily concerned with portraying the existing condition of a subject or phenomenon rather than examining causal relationships among variables (Creswell, 2007; Creswell & Plano Clark, 2011). According to Williams (2007), descriptive research provides a strategy for investigating issues as they appear in their current form. Likewise, Orodho (2005) and Salaria (2012)

explain that this type of design is useful for addressing present-day conditions, practices, beliefs, processes, relationships, and trends. Within the framework of this study, surveys were utilized to collect, document, and analyze information through questionnaires aimed at describing and assessing how Ethiopian secondary school teachers perceive the impact of leadership styles on their organizational commitment.

3.2 Target Population

The term "population" refers to all research participants or units of interest who share particular traits (Silverman, 2005). The study comprises five regions (Amhara, Oromia, SNNPR, Gambela, and Somali) out of nine regional states and one city administration (Addis Ababa) out of two city administrations by using a simple random sampling technique. From each region and city administration, one province/zone was selected, and from each province/zone, one district/woreda, and from each district/woreda, one high school was selected by using a multistage sampling technique.

Table 1: Sample size of the study

Secondary schools	X1	X2	X3	X4	X5	X6	Total
Number of teachers in each school	109	242	139	156	184	126	956
Sample size of teachers selected from each school	32	73	42	47	55	38	287

3.4 Data Collection

This study utilized two standardized instruments to gather data. Principals' leadership styles were measured through the Multifactor Leadership Questionnaire (MLQ) created by Bass and Avolio (1997), while teachers' organizational commitment was assessed using the Organizational Commitment Questionnaire (OCQ) developed by Allen and Meyer (1990). To verify the reliability and validity of these tools, a pilot test was administered at Dilla Secondary School in the Gedeo Zone of the Southern Nations, Nationalities, and Peoples' Region (SNNPR). The pilot results showed that the MLQ obtained a Cronbach's alpha value of 0.83, indicating a high level of reliability. Similarly, the OCQ, which measures affective, continuance, and normative commitment, demonstrated strong internal consistency, with all subscales scoring above the 0.70 threshold (Griffith, 2015). Further evidence of validity was provided through expert reviews and alignment with prior research findings (Northouse, 2013).

3.5 Data analysis techniques

The survey responses were processed using SPSS version 21 and examined through both descriptive

3.3 Sampling Procedure

Sampling refers to the method of selecting a portion of a population so that it accurately reflects the characteristics of the whole group (Burns, 2010). In this study, stratified random sampling was employed to choose 287 secondary school teachers from the target schools. The sample size was determined using the following formula:

$$n = \frac{N}{e^2(N-1)+1}$$

Where N is the total number of the teacher and e^2 is the probability of adjusting error occurrence when taking the sample.

and inferential statistics. Descriptive analysis, including mean values and standard deviations, was applied to summarize the data. To determine the relationship between principals' leadership styles and teachers' organizational commitment, Pearson's product-moment correlation was used. This statistical technique allowed for an assessment of both the strength and the direction of the relationships between the variables.

4 Results

4.1 Leadership Styles in Secondary Schools

Table 2 shows descriptive data for the five transformational leadership variables, three transactional leadership aspects, and one *laissez-faire* element that respondents stated.

According to the results in Table 2, the mean scores for the transformational leadership indicators varied between 2.90 and 2.32. In comparison, the transactional leadership factors showed mean values ranging from 2.68 to 1.64. The *laissez-faire* leadership style, however, recorded the lowest mean score of 1.08.

Table 2: Mean scores for the full range components of leadership styles

Full range leadership	Teacher respondents		
	N	Mean	SD
1 Transformational Leadership	287	2.54	1.22
Idealized influence	287	2.33	1.34
Idealized behavior	287	2.32	1.29
Inspirational motivation	287	2.90	1.06
Intellectual stimulation	287	2.62	1.16
Individual consideration	287	2.54	1.26
2 Transactional leadership	287	2.68	1.26
Contingent reward	287	2.68	1.17
Management by exception active	287	2.63	1.17
Management by exception passive	287	1.64	1.44
3 Laissez-fair	287	1.08	1.31

4.2 Organizational Commitments in Secondary Schools

Table 3 shows the mean scores of the three dimensions of organizational commitment as perceived by the teachers.

Table 3: Mean Scores on the Dimensions of Organizational Commitment

Dimensions	N	Mean	SD
Affective commitment	287	2.38	1.29
Continuance commitment	287	2.47	1.26
Normative commitment	287	2.62	1.15

According to the aforementioned findings, affective commitment had the lowest mean score of 2.38 and normative commitment had the highest mean score of 2.62. As a result, affective commitment is the least prevalent type of organizational commitment among secondary school teachers in the present study.

4.3 The Relationship between Principals' Leadership Styles and Teachers' Organizational Commitment

A Pearson correlation was used to examine the relationship between the three leadership philosophies and the three organizational commitment components. The information as evaluated by the

teacher respondents is shown in Table 4, which also shows their leadership styles and organizational commitments in the context of the schools.

Table 4: Pearson correlation matrix between principals' leadership styles and teachers' commitment dimensions

Leadership styles	Organizational Commitment		
	Affective	Continuance	Normative
Transformational	.354**	.400**	.407**
Transactional	.454**	.472**	.559**
<i>Laissez-faire</i>	0.021	-0.049	-.101*

* Correlation is significant at the $p < 0.05$ level (2-tailed).

** Correlation is significant at the $p < 0.01$ level (2-tailed)

As shown in Table 4, transformational leadership exhibited a positive statistical relationship with all three dimensions of organizational commitment. The Pearson correlation coefficients (r) were .354 for affective commitment, .400 for continuance commitment, and .407 for normative commitment. In the same way, transactional leadership also showed significant positive associations with teachers' organizational commitment. The corresponding coefficients were .454 for affective, .472 for continuance, and .559 for normative commitment. These results suggest that transactional leadership is moderately connected with both affective and continuance commitments, while its association with normative commitment was comparatively stronger.

Table 4 further indicates that laissez-faire leadership was negatively correlated with normative commitment and showed only a weak positive relationship with affective commitment. No meaningful association was found between this leadership style and continuance commitment.

In conclusion, the correlations presented in Table 4 reveal that all three leadership styles are significantly related to organizational commitment. However, while transformational and transactional leadership demonstrated positive effects, the relationship between laissez-faire leadership and normative commitment was negative.

5 Discussion

The combined results for transformational leadership dimensions in this study were below the "optimal" levels that Bass and Avolio (1997) proposed for effective leadership. By their standard, transformational elements should average 3.0 or higher to

indicate a strong style, yet the means here ranged from 2.90 to as low as 1.08. In contrast, the transactional factors were much closer to the expected range. Bass and Avolio (1997) recommended that scores for transactional leadership should typically fall between 2.0 and 3.0. The mean score in this study was 2.68, which aligns with that guidance. More specifically, contingent reward scored 2.63 and management-by-exception active scored 2.68, both within the appropriate range. By comparison, management-by-exception passive and laissez-faire both scored below 2.0, with mean values between 1.64 and 1.08.

Teachers' responses indicated that their principals did not fully demonstrate the hallmark behaviors of transformational leadership. These include instilling pride, fostering a shared vision, encouraging optimism, stimulating creativity, and providing mentoring support. Instead, teachers felt that their principals were more effective in transactional practices, particularly in clarifying expectations and recognizing accomplishments. The mean value for management-by-exception active reinforced this perception, as it suggested that principals were responsive in correcting mistakes when they occurred. However, the relatively low scores for management-by-exception passive and laissez-faire suggested that some teachers viewed district education administrators as neglectful in addressing problems.

Taken together, these results suggest that principals' leadership leaned more toward transactional ($M = 2.68$) than transformational ($M = 2.54$) or laissez-faire ($M = 1.08$). This pattern contrasts with Trottier *et al.* (2008), who emphasized that transformational leadership is generally regarded as the slightly stronger predictor of leadership ef-

fectiveness.

In relation to organizational commitment, Allen and Meyer (1990) did not prescribe standard or expected mean levels for affective, continuance, and normative commitment. However, previous studies (Brockner *et al.*, 1992; Shore & Wayne, 1993; Hunt & Morgan, 1994; Meyer *et al.*, 2004) observed a typical order of affective scoring highest, followed by normative, then continuance. The findings of this study diverge from that trend. Here, normative commitment was highest, followed by continuance, while affective commitment scored lowest. This indicates that although teachers identify with their schools, their emotional attachment is comparatively weak. The stronger normative commitment suggests that teachers recognized principals' mentoring, guidance, and role-modeling as influential in shaping their sense of obligation to the institution.

Leadership style was also linked to teachers' perceptions of continuance commitment, which relates to career security, transferable skills, retirement benefits, and alternative employment options (Allen & Meyer, 1990; Hunt & Morgan, 1994; Meyer *et al.*, 2004). Interestingly, the study's results differ from Lo *et al.* (2010), who reported that transformational leadership more strongly predicted all three forms of commitment.

Nevertheless, the current study supports the view that transformational leadership has a favorable association with teacher dedication. This finding is in line with Lo *et al.* (2010), who noted that transformational leadership is tied to emotional engagement, which helps explain its association with affective, continuance, and normative commitment. In the Ethiopian secondary school context, this suggests that principals who act as transformational leaders are better able to secure teachers' loyalty and support in pursuing higher-level goals (Bass, 1997).

The findings also revealed a positive relationship between transactional leadership and normative commitment. This demonstrates that practices such as reward systems, problem identification, and reinforcement are important for building teachers' sense of moral responsibility and duty to remain in their schools (Bass & Avolio, 1993; Allen & Meyer,

1990; Shukla, 2014). Similarly, the strong links between transactional leadership and affective as well as continuance commitment suggest that transactional strategies—such as exchanging rewards for performance, addressing problems directly, and monitoring outcomes—help encourage teachers to remain dedicated to their institutions (Allen & Meyer, 1990; Bass & Avolio, 1993; Shann, 2001).

This outcome is consistent with Buciuniene and Kudiene (2008), who found that transactional leadership was positively associated with affective, continuance, and normative commitment, though their results differed in the specific strength of these associations. Likewise, the present findings support those of Ponnu and Tennakoon (2009) and Lo *et al.* (2010), who also reported favorable connections between transactional leadership and organizational commitment. Marmaya *et al.* (2011) similarly noted that transactional leadership was positively associated with emotional commitment, reinforcing the current finding regarding its link with normative commitment.

By contrast, laissez-faire leadership showed little to no positive influence on affective or continuance commitment and was negatively linked with normative commitment. The passive characteristics of laissez-faire leadership—such as neglecting challenges, showing indifference, or failing to recognize accomplishments—undermined teachers' sense of obligation to their schools. These results are consistent with earlier studies that highlighted the weak or adverse effects of laissez-faire leadership on teachers' organizational commitment (Buciuniene & Kudiene, 2008; Popli & Rizvi, 2016).

6 Conclusion

This section presents the major outcomes of the study on leadership styles and organizational commitment. Both transformational and transactional leadership were found to be key approaches in assessing principals' leadership effectiveness. The findings highlight the importance of adapting leadership practices in ways that enhance teachers' organizational commitment. Specifically, transformational leadership showed a positive association with organizational commitment, while transactional leadership also demonstrated a favorable

link with teachers' sense of commitment. Thus, both dimensions of leadership contribute meaningfully to strengthening teachers' dedication to their institutions.

The evidence clearly indicates that leadership style plays a vital role in shaping teachers' organizational commitment. Consequently, the results have practical implications for leadership training in schools and for policymakers in the education sector. Principals are encouraged to create an atmosphere where teachers can freely share their ideas, engage in collaborative decision-making, and work in an environment that fosters openness and support. Such practices are likely to reduce stress, improve teachers' motivation, and enhance their engagement. Therefore, for principals to be effective, they need to seize opportunities that reinforce teachers' organizational commitment.

Recommendations

The following recommendations for practitioners and researchers were made based on the outcomes of descriptive and correlational analysis. As a result, principals who want to improve organizational commitment should think about the following:

1. Provide teachers with an effective leadership style that will increase the academic achievements of the students and organizational commitment.
2. Encourage their teachers to be more satisfied to improve organizational commitment.
3. Make principals aware of the full range of leadership styles to boost levels of organizational commitment among teachers by creating an information exchange system that allows them to improve their knowledge and skills for competence and organizational commitment. In this context, theoretical and practical seminars should be provided in partnership with MOE, the Regional Education Bureau, universities, and principals on the issue.
4. It is hoped that the findings will spur future research into other equally essential factors that influence leadership style. The influence of leadership style on organizational

commitment was the main area of interest in this study, which focused on one particular form of work-related behavior. As a result, future studies in this area could expand to include other dimensions related to teacher dedication.

5. In educational institutions, much more research is required. It could be repeated in a variety of secondary education settings. Additional research might be done with private secondary schools from a wider range of backgrounds, as well as a comparison of all employees. Another aspect that has to be addressed is leadership and teacher commitment.

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Ethical Approval

Consent was sought from the research participants. Confidentiality was maintained in reporting information.

Declaration of Competing Interest

This research was fully sponsored by Dilla University. The institution bears no responsibility for the findings other than for reporting purposes. The author is a staff member of Dilla University engaged in both teaching and research. All intellectual property rights (IPR) and relevant ethical standards were carefully observed throughout the study.

Availability of the Data

The author informs the journal editors that the dataset generated during this study is available and can be provided upon request.

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Predictors of Risky Sexual Behavior among Trainee Teachers in the Case of Dilla, Arbaminch, and Hosanna College of Teacher Education; SNNPRS, Ethiopia

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Abstract

This study aimed to examine predictors of risky sexual behavior among trainee teachers in the case of Dilla, Arbaminch, and Hosanna College of Teacher Education, SNNPRS, Ethiopia. In doing so, a descriptive cross-sectional research design was employed. Data were produced from 353 participants (i.e., 191 males and 162 females) and 15 key informants with unique job positions and responsibilities. A sample was selected through a multi-stage sampling technique. Both developed as well as adapted questionnaires and key informant interview protocols were utilized as data-gathering tools. Data analysis was carried out through a nonparametric binomial test, multiple linear regression, and thematic content analysis. The results demonstrated that various triggering conditions are followed by a tendency for the majority of trainee instructors to engage in risky sexual activity. Among predictive variables, social norms and permissive attitudes were solidified as the major predictive factors that trigger trainee teachers towards risky sexual behavior. Trainee teachers who are more prone to the influence of peer pressure and a permissive attitude toward risky sexual behavior are more likely to engage in risky sexual behavior. Thus, it is more advisable for governmental as well as non-governmental organizations to maintain and facilitate long-lasting psychosocial support for college trainee teachers about risky sexual behaviors.

1 Introduction

1.1 Background of the Study

Globally, sexuality and sexual conduct are critical concerns, especially among individuals aged 15–24 (Glen, 2015). Risky sexual practices are among the most widespread challenges in this age bracket, particularly during adolescence. This period marks a transitional stage characterized by major physical, emotional, cognitive, sexual, and social changes. According to WHO (2010), adolescence refers to those between 10 and 19 years. Young people worldwide are frequently confronted with or exposed to unsafe sexual behaviors, which may include early initiation of sexual activity, mul-

tiple and casual partners, transactional sex, coerced intercourse, sex while under the influence of alcohol or other substances, pornography-driven sexual engagement, and unprotected intercourse (Odeigah *et al.*, 2019).

Risky sexual behavior is defined in various ways, but one widely accepted explanation refers to unprotected vaginal, oral, or anal intercourse, as well as involvement in early sexual initiation, having multiple partners, inconsistent condom use, lack of contraceptive use, and substance-influenced sexual encounters (Glen, 2015). The Centers for Disease Control and Prevention (CDC, 2012) also describes risky sexual practices as those that elevate the likeli-

hood of contracting sexually transmitted infections (STIs) or facing unintended pregnancies.

In developing nations, where access to higher education is rapidly growing, it is crucial to understand the influences shaping young people's education and how these interact with university life (Magu *et al.*, 2012). At the higher education level, students are frequently exposed to unsafe sexual practices such as early sexual activity, multiple sexual partners, same-sex intercourse, unprotected sex, sex with older or non-regular partners (including commercial sex workers), and substance-induced sexual encounters (Alamrew *et al.*, 2013).

The rising student population in colleges and universities, combined with inadequate living and learning facilities as well as limited access to sexual and reproductive health services, can intensify the risks of unsafe sexual behavior (Alamrew *et al.*, 2013). Nevertheless, comprehensive knowledge about the prevalence, forms, and key contributing factors of risky sexual behavior remains limited in the study areas and across much of Africa. For instance, Mercy *et al.* (2014) examined risky sexual behaviors among female in-school adolescents in Delta, Nigeria, focusing only on predictors such as self-esteem, religiosity, and parental involvement. Similarly, Whitton *et al.* (2019) investigated youth in Kampala, Uganda, but restricted their analysis mainly to attitudes toward risky sexual practices.

In Ethiopia, only a handful of studies have addressed risky sexual behavior within higher education institutions (Dingeta *et al.*, 2012). Research exploring why students engage in multiple sexual partnerships or fail to use protective measures remains scarce. For example, Girma (2017) analyzed the influence of social media on students' risky sexual behavior at Hawassa University, but the findings were confined to social media effects and cannot be generalized beyond that setting. Likewise, Tsige (2012) investigated students' attitudes toward risky sexual practices at Adama University, examining only a single predictor variable attitude while overlooking others.

This highlights a research gap regarding how multiple factors such as social norms, self-efficacy, self-esteem, attitudes, and behavioral aspects (e.g.,

substance use) collectively shape students' risky sexual behavior. Addressing this gap, the present study considers multiple predictors to broaden understanding and provide insights into effective strategies for reducing risky sexual practices among college students.

Therefore, the study addressed the following basic research questions:

1. What is the prevalence of risky sexual behavior among trainee teachers?
2. What are the major predictors of risky sexual behavior among trainee teachers?

2 Review of Related Literature

2.1 Essence of Risky Sexual Behavior

The prevalence of risky sexual practices is increasing rapidly, creating serious concern both for adolescents in general and college students in particular. Risky sexual behavior encompasses practices such as early initiation of sexual activity, multiple sexual partners, inconsistent or non-use of condoms, and sexual encounters with unknown individuals. These behaviors heighten vulnerability to sexually transmitted infections (STIs), including HIV, as well as unintended pregnancies and psychological challenges (Kerpelman *et al.*, 2016).

Adolescents and school-age youths often have little prior experience or maturity in managing sexual relationships. As a result, they are more likely to engage in unsafe practices such as frequent changes of partners, unusual forms of sexual activity, and diverse orientations, expectations, and desires, which differ significantly from those of adults (Odimegwu & Somefun, 2017).

One of the most notable risk factors is engaging in sex without protection. This significantly increases the likelihood of contracting STIs, and numerous studies have documented the strong association between having multiple partners and the high prevalence of HIV infection (Kyilleh *et al.*, 2018). Kyilleh and colleagues (2018), as cited in Kato and Omona (2021), reported that many school-age adolescents engage in unprotected sex for reasons such as testing fertility, proving love, seeking marriage prospects, or economic survival.

In such contexts, condoms are often avoided because they are perceived as reducing sexual pleasure or due to difficulties in accessing them, making their consistent use impractical (Kato & Omona, 2021).

2.2 Major Predictors of an Individual's Risky Sexual Behavior

Peer groups and risky sexual behavior

Peer groups consist of individuals of similar age who generally share comparable educational backgrounds, social status, and interests. Within such groups, peer norms and peer influence play an essential role in shaping health-related behaviors (Peci, 2017). These peer norms strongly affect decisions about sexual initiation, early engagement in sexual activity, and later patterns of sexual behavior. Peers may influence college youths directly by modeling risky sexual practices or indirectly through perceptions of their attitudes and behaviors (Sneed *et al.*, 2015).

Adolescents who believe their peers are sexually active are more likely to start sexual activity early and to have multiple partners compared with those who think their peers abstain (Olufemi *et al.*, 2018). Similarly, research with high school learners has shown that when young people perceive approval of sexual activity within their friendship circles or peer groups, they are more inclined to practice risky sexual behaviors themselves (Doornwaard *et al.*, 2015).

University and college students are particularly vulnerable to peer influence because of their heightened sensitivity to social reinforcement and the desire for peer approval. This often drives them to behave in ways that secure recognition and acceptance within their age group (Blakemore, 2018).

Attitude and risky sexual behavior

Attitude reflects an individual's beliefs and perceptions toward certain behaviors. According to Guilamo-Ramos *et al.* (2008), as cited in Muhammad *et al.* (2017), attitudes shape whether a person chooses to engage in specific actions. In conservative societies such as Malaysia, Hong Kong, and China, non-permissive attitudes toward premarital

sex are traditionally common. However, modernization and social changes have contributed to more permissive outlooks among sexually active youth in these regions (Ahmadian *et al.*, 2014).

Tilahun *et al.* (2020), in their study on students in Metu Town, Southwestern Ethiopia, found that many respondents demonstrated permissive attitudes that made them more likely to engage in risky sexual behaviors. Out of the total participants, 70.4% reported that they supported or practiced substance use such as alcohol, hashish, or cigarettes, which can contribute to unsafe sexual activity. Additionally, over half of the respondents (51.5%) expressed favorable attitudes toward risky sexual behavior, while 48.5% displayed negative or restrictive attitudes.

Earlier findings also align with this. Nigatu & Seman (2011), cited in Tsige (2012), revealed that many university students displayed unfavorable attitudes toward risky sexual practices, emphasizing the diversity of attitudes across campuses.

Theoretical Model of the Study

Various approaches discuss risky sexual behavior among adolescents from different models. Among these models and approaches, the following is the most significant and has more details on risky behaviors, including risky sexual behavior.

Theory of Planned Behavior

To better explain and predict how individuals regulate their own behavior, the Theory of Reasoned Action (TRA) was first proposed by Icek Ajzen in 1980. This model was later refined into the Theory of Planned Behavior (TPB), which places strong emphasis on the role of behavioral intentions (Whitton *et al.*, 2019). According to this framework, people's intentions and their perceived ability to control certain actions are shaped by different background factors. These background factors influence their underlying beliefs, which in turn shape their intentions and ultimately their actual behavior.

The TPB has been widely used to understand health-related practices, including sexual behaviors, by highlighting how personal beliefs and intentions are connected to engagement in risky practices. It has

also provided valuable insight into how behavioral factors contribute to disease prevalence (Ngidi *et al.*, 2016).

The model identifies three categories of beliefs: behavioral, normative, and control.

- Behavioral beliefs are linked to the anticipated outcomes of a particular action. These beliefs influence attitudes, which depend on how strongly a person holds the belief and how they evaluate its consequences.
- Normative beliefs reflect the expectations and perceived approval of others, especially larger social groups. These feed into subjective norms, or the sense of peer or social pressure, which shape decisions about whether to act.
- Control beliefs involve the perception of factors that either enable or hinder behavior. They contribute to perceived behavioral control, which refers to how capable a person feels of performing a given behavior. This perception can act as a substitute for actual control, which is often difficult to measure directly.

Overall, TPB offers a comprehensive approach for analyzing why young people may engage in risky sexual behaviors by connecting intentions, social influences, and perceived control with actual practices (Whitton *et al.*, 2019).

3 Materials and Methods

This study was designed to explore the primary predictors influencing trainee teachers' engagement in risky sexual behaviors. A descriptive cross-sectional survey design was adopted, guided by a convergent parallel mixed-methods approach. Within this framework, both quantitative and qualitative data were gathered simultaneously, analyzed separately, and then integrated for triangulation.

The use of a mixed-method design made it possible to generate a more comprehensive understanding of the problem by combining statistical analysis with in-depth qualitative insights. As noted by Greene (2008), such an approach allows for blending qualitative and quantitative data within a single research

project at different stages, thereby strengthening the reliability and interpretability of the findings.

3.1 Target Population of the Study

The target population of this study was all available regular trainee teachers at Dilla, Arbaminch, and Hosanna College of Teacher Education for the 2021/22 academic year. As data secured from the records of respective colleges reveals, the total number of all available regular trainee teachers was almost 2,827 (i.e., DCTE = 953, ACTE = 1,035, and HCTE = 839). Thus, it encompasses all students from diverse streams and their respective departments. For the qualitative data, 15 key informants were purposely selected for the sake of having depth and factual information.

3.2 Sample and Sampling Procedure

In the current research, 353 trainee teachers were selected via a multi-stage sampling procedure from their respective colleges. For the qualitative part of the study, 15 key informants were purposely selected to attain some supportive information to triangulate with the main quantitative data of the issue under investigation.

3.3 Data collection instruments

Data collection instruments were chosen and decided based on the types of variables in the study. Both developed and adapted questionnaires were employed to collect information on predictive variables. In doing so, the present researchers used a total of 40 items to measure the determinants of risky sexual behavior. A questionnaire for substance abuse was developed by current researchers based on a review of the literature. Instruments to assess peer pressure, social norms, attitude, and self-efficacy towards risky sexual behavior were reviewed, contextualized, and adapted from Muhammad *et al.* (2017) Youth Sexual Intention Scale (YSI-Q), which was constructed based on the Theory of Planned Behavior.

The self-esteem measure was adapted from Rosenberg's (2015) Self-Esteem Measurement Scale (RSE). The measure or instrument for risky sexual behaviors (practice and intention to engage in risky sexual activity) was more internalized, strictly as

well as carefully contextualized or adapted from the Risky Sex Scale/Survey of Turchik (2007). The instruments of this study were checked and evaluated by the selected psychology department's staff. The experts evaluated the appropriateness of each item, the required components, the adequateness of the items in each instrument, how each item expressed the required issue, and the amenity of each item in terms of the participants' socio-cultural contexts. In addition to this, a pilot test was carried out by having 10% of the sample size of participants without replacing them in the main study. Thus, the total items' internal consistency, or Cronbach's alpha, was 72. On the other side, three (3) specific semi-structured questions or key informants' guidelines were used to explore some key, in-depth, and supportive information to triangulate with quantitative data.

3.4 Data Processing and Analysis

After collecting the data, an initial cleaning process was conducted to exclude incomplete responses. For the quantitative dataset, responses were coded and transformed into numerical values to facilitate entry and analysis. Structured and close-ended items were systematically organized before being processed using SPSS version 20.

Several statistical techniques were employed. To determine the prevalence of risky sexual behavior among trainee teachers, a nonparametric binomial test was applied. In addition, stepwise multiple linear regression was used to assess both the main and interaction effects of predictors namely social norms/peer pressure, attitudes, self-esteem, self-efficacy, and substance use on risky sexual behavior.

For the qualitative dataset, responses obtained from interviews were examined using thematic content

analysis. This approach allowed the researchers to identify recurring patterns, themes, and explanations that complemented the statistical findings, thereby ensuring a deeper understanding of the issue under study.

4 Results

The central purpose of this study was to assess predictors of risky sexual behavior among trainee teachers in the case of Dilla, Arbaminch, and Hosanna College of Teacher Education, SNNPRS, Ethiopia. To achieve this objective, data were produced via quantitative and qualitative approaches. The results were treated according to the research questions of the present study. In doing so, findings secured via the quantitative approach are presented head-to-head with those of the qualitative approaches as follows:

As divulged in Table 1, the majority of the study respondents (190), or 54%, were above an average or mean value, while 163 (46%) were below the mean value concerning the nonparametric binomial test. The result confirmed that the majority of respondents tend to agree with all issues that describe the basic features of risky sexual behavior. That is to say that the majority of the respondents engaged in moderate or average amounts of risky sexual behavior on the current study sites. On the other hand, findings from key informants strongly solidified that there is an observable as well as extreme prevalence of risky sexual behavior among students in their respective colleges. The key informants confirmed the existence of risky sexual behavior among students by checking and observing students' odd clothing styles, hairstyles, unique facial features, sexual (erotic)-related actions, and making relationships with many opposite-sex partners in and out of the classroom.

Table 1: Results of Binomial Test on Prevalence of Risky Sexual Behavior among Respondents

Binomial Test						
	Category	N	Observed Prop.	Test Prop.	Exact Sig. (2-tailed)	
Practice of Risky sexual behavior dichotomy	Group 1	.00 163	.46	.50	.166	
	Group 2	1.00 190	.54			
	Total	353	1.00			

Table 2: ANOVA Summary Result of Multiple Linear Regression Model

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3918.679	5	783.736	27.411	.000 ^b
	Residual	9921.542	347	28.592		
	Total	13840.221	352			

a. Dependent Variable: Risky Sexual Behavior
b. Predictors: (Constant), Substance Abuse, Peer pressure/social norms, Self Esteem, Self-Efficacy, Attitude

The results in Table 2 show the extent to which the model explains variations in the dependent variable, alongside the residual portion that remains unexplained. The findings indicate that the independent variables collectively exert a significant influence on the dependent variable. This is evidenced by

an F-value of 27.411 and a p-value below 0.05 ($p < 0.000$). Hence, the model applied in this study can be considered statistically robust and effective in accounting for the observed variation in the dependent variable.

Table 3: Regression Model Summary to the Independent Variables (*i.e.* model to the major predicting factors of risky sexual behavior among trainee teachers)

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.532 ^a	.283	.273	5.34718	1.847

a. Predictors: (Constant), Substance Abuse, Peer norms, Self Esteem, Self-Efficacy, Attitude.
b. Dependent Variable: Risky Sexual Behaviors.

As shown in Table 3, the value of adjusted R² (.273) indicates the predictive variables in the model explain 27% of the variation in the dependent variable. This outcome empirically indicates that independent variables such as peer pressure and permissive attitude are witnessed as predictive variables or factors that trigger trainee teachers to take part in risky sexual behavior. Table 4 shows the results of the regression model. The result reveals that among predictive variables, self-esteem, self-efficacy, and substance abuse were insignificant, whereas there is a significant relationship between peer norms as well as attitude and risky sexual behavior among the research participants.

As illustrated in Table 4, among the five explanatory variables tested in this study, peer norms with coefficient (beta = .183) and attitude with coefficient (beta = .423) and attitude with coefficient (p-value < .001)

were statistically significant at 5 percent or lower. The result implies that peer group and attitude are attested as predictive variables or factors that propel trainee teachers to engage in risky sexual behavior by the weights and signs on the coefficients of beta. That is to say that there is a high level of involvement in risky sexual behavior among participants who are exposed to the influence of peer pressure and a permissive or directive outlook or attitude towards risky sexual behavior by holding all the other independent variables constant. Furthermore, key informants also frankly proved that there is a direct and obvious pressure or influence from social groups, especially peers, low self-esteem, economic as well as academic dependency, deprived life skills, limitation of sex-related education, out-of-campus residence or owning more freedom, and favorable or permissive views of trainee teachers towards risky sexual behavior.

Table 4: Results of the Regression Model

Model		Coefficients ^a								
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance VIF
1	(Constant)	16.139	2.542		6.349	.000				
	Peer norms	.250	.067	.183	3.730	.000	.332	.196	.170	.855 1.170
	Self Esteem	-.024	.068	-.017	-.358	.721	-.025	-.019	-.016	.941 1.063
	Self Efficacy	-.141	.096	-.070	-1.465	.144	-.138	-.078	-.067	.903 1.108
	Attitude	.607	.072	.423	8.408	.000	.501	.411	.382	.815 1.227
	Substance Abuse	.007	.184	.002	.036	.971	.062	.002	.002	.976 1.025

a. Dependent Variable: Risky Sexual Behavior

5 Discussion

The general objective of this study was to assess predictors of risky sexual behavior among all trainee teachers at the study sites. Having this, the discussion was made as follows:

Regarding the first research objective, i.e., the magnitude of the prevalence of risky sexual behavior among respondents, as divulged in Table 1, the majority of the study respondents (190) or 54% were above an average or mean value, while 163 (46%) were below the mean value with respect to the nonparametric binomial test. Thus, the result revealed that the majority of respondents tend to agree with all items that describe the basic features of risky sexual behavior. On the other side, findings from key informants strongly proved that there is a tangible, or observable, as well as extreme prevalence of risky sexual behavior among students in their respective colleges.

The key informants assured the existence of risky sexual behavior among students by checking and observing students' odd clothing styles, hairstyles, sexual (erotic)-related actions, and making relationships with many opposite-sex partners in and out of the classroom. The result is utterly supported by and related to the study of Odimegwu and Somefun (2017) in Nigerian youth, which found that large numbers of school youth have limited experience and commitment to sexual relations and are more likely to have risky sexual behavior. It incorporates the large number and different types of partnerships or multiple partners, unusual sexual practices, and sexual orientation, wishes, expectations, and outlooks compared to other age groups, especially

adults.

Correspondingly, the current finding is consistent with the investigation of Kyilleh *et al.* (2018), as quoted in Kato and Omona (2021), where school adolescents engaged in unprotected sexual practices as a way of testing their fertility, assurance of love, bait for marriage, and livelihood. Condoms were believed to inhibit the pleasure of sex, and since many engaged in sex for pleasure, the use of a condom was also regarded as impracticable, coupled with inconvenience or challenges involved in getting condoms.

Based on the second objective of the current study, which was to identify the major predictors of risky sexual behavior among participants, as expressed in Table 3, among the five predictive variables tested in this study, peer pressure and social norms with a coefficient (beta = .183) and a p-value <.001) and attitude with a coefficient (beta = .423) and a p-value <.001) were statistically significant at 5 percent or lower. The result implies that peer pressure, social norms, and attitude are examined as predictive variables or factors that trigger trainee teachers to engage in risky sexual behavior by the weights and signs on the coefficients of beta. That is to say that there is a high level of involvement in risky sexual behavior among trainee teachers and students who are exposed to the influence of peer pressure and a permissive or directive outlook or attitude towards risky sexual behavior. Furthermore, key informants also confirmed that there is supreme pressure from social groups, especially peers, positive or permissive views, and low self-esteem of trainee teachers towards risky sexual behavior.

The current researchers have tried to explore ample related literature or evidence to conduct cross-checking between the present study's results and already existing research findings. Thus, the current finding on the predictive variable, i.e., the significant influence of peer pressure and social norms towards risky sexual behavior, thoroughly agreed with the finding of Sneed *et al.* (2015), who concluded that peer norms have a significant impact on intentions to have sex, early sexual debut, and subsequent sexual behavior; peers may influence college students, especially youths' sexual behavior, through direct modeling of sexual behavior, including risky sexual practice, and the adolescent's perception of peer outlook, views, or tendency toward sex-related activities. In addition to this, the finding of the current research is quietly consistent with the corresponding investigation by Doornwaard *et al.* (2015), who explain that young school students with perceptions that their peers or norm group approve of and engage in sexual activity are more likely to engage in sexual activity incorporating risky sexual practices themselves.

Furthermore, the finding of Olufemi *et al.* (2018) in a study on the prevalence and predictors of early sexual debut among adolescents in Ogbomoso, Nigeria, implicitly supports the present study's finding by explaining that school youth who think and accept that their friends are sexually active are more likely to have initiated sex and have more partners compared to the youths who perceive that their friends are not sexually active.

The finding of the current study regarding the significant impact of a permissive attitude towards risky sexual behavior or practice is supported by Ahmadian *et al.* (2014), who conducted a study on risky sexual behavior among rural female adolescents in Malaysia. They stated that a non-permissive attitude towards premarital sex, or risky sexual behavior, is common among conservative cultures like the people in Malaysia. However, there are inadvertent or unexpected changes in people's attitudes, and a permissive attitude is now common among sexually active youths in Malaysia due to the modernization system. Also, Tilahun *et al.* (2020), in a study titled Knowledge, Attitude, and Practice towards Risky Sexual Behaviors among

Secondary and Preparatory Students of Metu Town, South Western Ethiopia, confirmed and agreed that attitudes pertained to risky sexual behaviors; about 254 (70.4%) of the respondents responded that they appreciated, favored, and were willing to expose and engage in risky sexual behaviors. However, the finding is inconsistent with the result of Nigatu & Seman (2011), as quoted in Tsige (2012), who stated that practical observation and systematic review show that for many campus students, there was an unfavorable or negative attitude or outlook toward risky sexual behavior (Tsige, 2012).

6 Conclusion

The current research investigation has tried to surround as well as engross the predictive factors of risky sexual behavior among trainee teachers in the selected teacher training colleges. As a result of both quantitative and qualitative approaches, the majority of trainee teachers are involved in risky sexual behavior at the current study sites. In the vein of linear regression, peer pressure and favorable or permissive outlooks are the major predictors of risky sexual behavior. Furthermore, economic as well as academic dependency, norm groups, one's outlook, deprived life skills, lack of awareness, out-of-campus residence, or owning more freedom are also the major triggering factors behind students' risky sexual behavior regarding thematic content analysis.

Recommendations

Based on the conclusions made from the findings, the following major avenues are forwarded:

- It is advisable that professional counselors, counseling centers, and resources be available to college students.
- Follow-up and monitoring, as well as evaluations, are more advisable for students' both in- and out-of-room maladaptive behaviors (like unique wearing styles, sexual (erotic)-related actions, unusual hairstyles, and having imbalanced alcohols or other stimulating drugs).
- Parents and the community should be involved in the psychoeducation of risky sexual behavior.

- Students in the campus dormitory residence or house service need to be facilitated and maintained.

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Ethical Approval

Consent was sought from the research participants. Confidentiality was maintained when reporting information.

Conflict of Interests

The authors declare that there is no conflict of interest.

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Teacher's Performance Appraisal Practice and Challenges in Government Primary Schools of Dilla City Administration

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Abstract

The main purpose of this study was to assess the current practice and challenges of teachers' performance appraisal practices in government primary schools under the Dilla City administration. The research utilized a mixed-method concurrent triangulation design approach. There were four complete primary schools in the city, and two of them were included in the study. From these schools, 62 teachers, two principals, one school supervisor, two department heads, two PTAs, and two students were selected as a sample. Concerning the sample, teachers were selected using proportional and systematic sampling techniques. Contrary to this, the purposive sampling technique was used to select principals, department heads, and student council; PTAs and one supervisor were also selected by the available sampling method. Findings from both instruments were presented in an integrative way. The findings of the study revealed that teacher performance appraisal has been a common practice, often conducted twice a year, but with the principal as the dominant appraiser. Concerning purpose, the current system of teachers' performance appraisal has not mainly served the developmental drives of PA. The criteria used to appraise teachers were viewed by teachers as fine, but the participation level in the formulation process was forced by the South American Nationalities Education Bureau. Concerning common challenges in the TPA: poor feedback system, low teacher participation, post-appraisal discussions, students' bias, and sometimes using PA for revenge. The text advocates for teacher involvement in formulating TPA criteria, involving stakeholders, and adapting guidelines, while also recommending meticulous assessment of teacher performance using interpersonal communication.

1 Introduction

1.1 Background of the Study

To achieve the objectives for which it was founded, an organization needs both human and non-human resources. The most valued and in-demand of these resources for the effective achievement of the intended goals is people. This is frequently the case since human resources offer the ability, skills, and efforts necessary to efficiently and effectively employ all available resources (Zeng & Qi, 2021). Any organization's management and oversight of its overall activities, whether directly or indirectly, depends on its human resources.

Performance appraisal is a part of the HR management method that identifies, measures, and evaluates staff performance and then discusses that performance with the employee (Ozkaser, 2019). This tells us that performance appraisal is a proper, structured system of measuring and evaluating job-related behaviors and outcomes to get performance reasons and the way to perform effectively in the future so that employees, organizations, and society are going to benefit.

It is considered an instrument through which an employee's performance and capabilities can be

matched to the job requirements and career plan over time. A properly designed performance appraisal system serves as a device for better communication and development of the employee as well as for the attainment of organizational goals and objectives (Negash *et al.*, 2021). General personnel choices are made using a performance appraisal. It contributes to choices about promotions, transfers, and terminations (Islami *et al.*, 2018). It acts as a tool for determining training and development requirements as well as a standard by which programs for selection and development are evaluated. The objective of giving employees feedback on how the organization perceives their performance is likewise achieved via appraisal. Similar to other social institutions, schools were created to support the teaching and learning process. They are institutionalized to alter and enhance kids' conduct (Monari & Wanjau, 2022). A system of teacher performance appraisal (TPA) properly designed and implemented is believed to have favorable results in the professional development of teachers. In school settings, according to Vansteenkiste *et al.* (2020), teachers are the primary expensive resources who need and deserve support and encouragement to extend their skills and the frontiers of their knowledge.

In Ethiopia, the present system of performance appraisal of teachers is result-oriented performance appraisal (ROPA) and outlines four performance categories: poor, acceptable, very good, and excellent. Mohammed (2020) based on teachers' results on key, major, and minor tasks. In the context of Ethiopia, primary school teachers estimate that based on the results of the performance appraisal and length of teaching experience, teachers have the chance to grow into nine stages in the career ladder structure: beginner teacher, junior teacher, teacher, and senior teacher, associate teacher, lead teacher, senior lead teacher-I, senior lead teacher-II, and senior lead teacher-III (SREB, 2017).

Teacher performance appraisal in Ethiopia has lots of problems. According to Shugate (2020), some of the problems with teaching performance evaluations in secondary schools in Ethiopia include inadequate evaluator skills, performance criteria that are unrelated to instructors' professions, and

a negative attitude towards the entire system of performance ratings.

Presently, government schools at all levels execute performance appraisals, which are occasionally done. However, it seems that performance appraisal is given the proper attention by those schools and exercised periodically more as a usual practice than as a tool of motivation based on which various administrative and developmental decisions are taken.

The major purpose of this study was to assess the practice and challenges of teachers' performance in government primary schools in Dilla city administration. The study also aims to fill the existing gaps and give possible recommendations for improving the performance appraisal practices of the target schools. Therefore, at the end of this study, the researcher planned to achieve the following specific objectives:

- Examine the existing performance appraisals in those government primary schools.
- Assess the awareness of teachers about the purpose of the current TPA.
- Identify the challenges of teachers' performance appraisals in schools.

2 Research Method Approach

For this study, a mixed method was employed. A mixed-methods procedure that combines data from both quantitative and qualitative methods to provide a better understanding of a research problem. It can be useful when unexpected results arise, deepen understanding of quantitative findings, and help design and validate research instruments. Additionally, interviews and document analysis fall under the qualitative approach (Creswell & Zhang, 2009). Mixed research methods are convenient for the social and human sciences as distinct research is used to collect extensive data and confirm findings from different data sources. In general, mixed-methods research represents research that involves collecting, analyzing, and interpreting quantitative and qualitative data in a single study or in a series of studies that investigate the same underlying phenomenon.

Researchers may use various mixed-methods research designs depending on the study topic, available data, and available resources (Dawadi *et al.*, 2021). For this study, the researcher used convergent parallel triangulation mixed methods designs. This design benefits the researcher, who converges or merges quantitative and qualitative data to provide a comprehensive analysis of the research problem (Creswell & Zhang, 2009). In this procedure, the qualitative and quantitative strands are usually weighted equally.

Hence, the researcher used triangulation to validate quantitative data for this study. In this context, the researcher collects both types of data at the same time. In short, interview qualitative items were adjusted and held at a time during the collection period of the quantitative survey.

This design directly compared and contrasted the quantitative results with qualitative findings for corroboration and validation purposes. A qualitative component promotes a better understanding of complex situations (often an understanding of the phenomena from the participant's point of view), while a quantitative component allows researchers the opportunity to answer questions that concern relationships among the measured variables to explain, predict, and control phenomena.

2.1 Population

The target population of this research was all the permanent teachers, principals, cluster supervisors, department heads, PTAs, and student councilors in the entire four primary target schools in the Dilla City administration. In Dilla city administration, there were four full-cycle primary schools.

2.2 Sample Size and Sampling technique

Muluaem *et al.* (2022) define sampling as the process of selecting a subset of the population to serve as a representative sample of the entire population of objects, people, or animals. Additionally, it says that a sample that contains the majority of the data necessary to achieve the research's goal is one that was correctly chosen. To make the sample area manageable and representative, the schools were selected by a simple random sampling technique. In this case, two primary schools are taken from

the total number of primary schools in the city. In the two full-cycle primary schools, there were 73 teachers and 18 administrative bodies that could participate in the appraisal of the performance of teachers (six principals, four department head teachers, four PTA representatives, four representatives' student council, and one cluster supervisor).

According to Dhivyadeepa (2015), in order to perform a stratified random sample, the researcher has to obtain a comprehensive list of the population and clearly split each unit into one stratum. Thus, the researcher took into consideration the number of teachers, department heads, and student council members while choosing a sample from a school for this study using stratified and simple random selection approaches.

Concerning sample teachers, first, the researcher determines the sample teachers via the Cochran sampling size determination table, and then they are selected using proportionality and systematic sampling techniques. Then, from each school, sample units were selected via a systematic sampling technique. 50% of teachers from each school were included in the study, which makes up a total of 62 teachers. This technique was used to include teachers from each school in proportion to their size to ensure representation in the population. After the number of samples was determined, systematic sampling techniques were used, and, thus, every 3rd teacher on the name list was selected using the formula,

$$K = \frac{N}{n},$$

Where "N" is the total number of teachers in the school and "n" is the sample required from that population.

Utilizing a formal tone, the selection of 62 teachers from the sample schools was accomplished through the application of the formula $K = \frac{N}{n}$, where "n" signifies the necessary sample from the population and "N" denotes the entire teacher population in the respective schools. Moreover, two Parent-Teacher Associations (PTAs) were selected via purposive sampling, which entailed the active participation of two PTA members in the teacher appraisal process, while the remaining individuals did not actively

participate in PTA tasks. In essence, two department heads with a year or more of experience and two student representatives from grade eight were chosen through purposive sampling based on their maturity level and academic performance. Additionally, two principals, one from each school, were selected to provide accurate data that would best enable them to address the research questions. As noted by Manna and Mete (2021), purposive sampling allows researchers to choose a sample based on their informed judgment and understanding of the population. Furthermore, one supervisor was selected using the available sampling method.

2.3 Data Collection Instruments

Considering the aforementioned fact, three types of data collection instruments were used: primary data sources, namely the questionnaire and the interview. Secondary data sources were relevant documents that the researcher used as additional evidence for the study. Questionnaires were used to collect information from teachers, and interviews were used to collect information from principals and supervisors, student council members, department heads, and PTA members. The questionnaires were composed of closed-ended items and contained demographic variables about the respondents.

The closed-ended items were treated using a 5-point Likert scale of strongly agree (SA), agree (A), moderate (M), disagree (DA), and strongly disagree (SD) with their respective values of 5, 4, 3, 2, and 1, respectively. The questionnaires contain five different parts and 34 closed-ended questions. When responding due to language barriers, the questionnaire distributed to teachers was translated from English to Amharic. Most of the items were adopted from previous related studies (Baye, 2021). An equal number of the questions were restructured by the researcher himself.

Interviews are a valuable tool for researchers, as they facilitate the collection of diverse perspectives from participants and enable the gathering of detailed, first-hand information (Kelly *et al.*, 2010). The study utilized interviews to gather valuable information from selected informants, including department heads, student council members, PTAs, school principals, and cluster supervisors, based on

their roles. This study utilized semi-structured interviews to gain in-depth insights into the strategies and measures employed by each school to achieve their goals, particularly regarding teacher performance appraisal practice, due to their flexibility in question order.

The study analyzed sample schools' performance appraisal records for the 2021–2022 academic year, portfolio documents, and appraisal criteria, as well as portfolio documents demonstrating the link between appraisal and the TPA process, criteria, problems, and interventions.

2.4 Procedures for Data Collection, Analysis, and Interpretation

The initial step in data analysis was systematic data collection, which entails gathering data sets that are examined for patterns and trends (Englander, 2012). This process involves utilizing a variety of data collection techniques, including surveys, focus groups, interviews, observations, experiments, and secondary data analysis. These techniques are employed to gather data from a range of sources, investigate it for trends and patterns, and interpret it to gain new insights. In this study, data was collected through surveys, interviews, and document analysis and examined to provide context for the information that had been gathered.

2.5 Method of Data Analysis

The initial portion of the questionnaire, which pertained to biographical information, was analyzed and interpreted through the use of descriptive techniques, specifically percentages. Additionally, the data collected via closed-ended questions was encoded and analyzed statistically using SPSS version 23. To evaluate the differences between two independent groups of data collected from schools A and B, an independent t-test was utilized. This statistical method is appropriate for comparing the means of two sets of data (Duffy & Orlandi, 2008; Watson & Moritz, 1998). Thematic analysis and semi-structured interviews were employed to obtain words, phrases, statements, and paragraphs to narrate the qualitative data. The qualitative data were utilized as a complement to the quantitative data.

3 Results and Discussion

3.1 Practice of Teachers' Performance Appraisal

Accordingly, Tables One, Two, and Three, followed by a data description, present the practice that was measured in terms of accessibility, frequency of oc-

currence, and appraisers in a teacher's performance appraisal in the targeted school.

Table 1: Availability of Teachers' Performance Appraisal

Is there formal appraisal process in your school?						Total	
Yes	%	No.	%	I have no idea	%	No.	%
61	98.4	1	1.6	0	0	62	100

Participants were asked to rate the availability of PA practice; accordingly, 61 (98.4%) of teacher respondents confirmed that there was a formal PA

practice in their schools. whereas the remaining one respondent in the table responded that there is no formal PA.

Table 2: Frequency of occurrence of Teachers' Performance Appraisal

How often is performance appraisal conducted in your organization? Per year								Total	
Once	%	Two times	%	Three times	%	Four times and above	%	No.	%
8	12.9	50	80.6	3	4.8	1	1.6	62	100

Concerning the frequency of occurrence displayed in the above, 50 (80.6%) respondents confirmed that performance appraisal activities were held in their school semiannually or twice a year. The

remaining 8, 3, and 1 teachers assured that they were appraised once a year, three times a year, and four times or more a year.

Table 3: About appraisers of Teachers' Performance Appraisal

In your school, who are involved in the process of teachers' performance appraisal?											
Directors &/or Vice Directors	%	Department heads	%	Student	%	PTA	%	Supervisors	%	All	%
48	77.4	6	9.7	3	4.8	1	1.6	4	6.5	0	0

Regarding appraisers, a majority of the respondents (48, 77.4%) claimed that directors or vice directors; the rest (six, 1, 4, and 0 respondents) discovered that department heads, student council members, members of PTA, cluster supervisors, and all were involved in undertaking teachers' PA, respectively.

In the same mood, interviewees asserted that there is a formal appraisal practice in their school to achieve different goals. Interviewee TR revealed that "performance appraisal in our school aims to enhance better learning and achieve the school's intended outcome." Similarly, interviewee WMH explained that "the aim of PA in the school is to identify the strengths and weaknesses of teachers

and coach them on their limitations to help my school achieve its intended purpose." Likewise, interviewee TH asserted that "the purpose of PA in my school is to motivate best-performing teachers and punish unsuccessful teachers, provided that both accountability and motivational purposes are materialized." Similarly, interviewees SUP and SC explain, "The results of our twice-a-year teacher performance evaluation at our school will be used as a measure of progress and other benefits." This tells the researcher that performance is being assessed in the schools. The independent *t – test* results in terms of availability of formal PA in each school, regarding the frequency of PA in the two schools,

and concerning who is involved in the process of teacher PA ($D = 0.576$ and $p - value > 0.05$), ($D = 0.666$ and $p - value > 0.05$), and ($D = 0.355$ and $p - value > 0.05$) respectively, show that the mean

of the appraisal practice didn't bring any statistically significant variation between schools, implying that the accuracy of the performance appraisal practice was almost the same across schools.

Table 4: Independent samples $t - test$ for carry out of performance appraisal

	Sig.	Sig. (2-tailed)
Is there a formal appraisal system in your school?	.255	.576
		.323
How often is performance appraisal conducted in your school?	.829	.666
		.685
Who are involved in the process of teachers' performance appraisal?	.019	.233
		.355

Note: The Sig (2-tailed) is a two-tailed p-value used to evaluate the null hypothesis that the mean is not equal to 50, and a value below the alpha level indicates statistically significant difference from zero.

3.2 Purpose of Teacher's Performance Appraisal

The purpose of a teacher's performance appraisal is to assess their effectiveness and provide feedback on their teaching methods and strategies.

Regarding the purpose of the performance appraisal, 13 items of questions were arranged and disseminated to teacher respondents. Of these questions, the first five focus on the purpose of PA being to improve instruction; the second three items of questions focus on teachers' professional development; the third two items of questions weigh on aiding school administrators in making decisions; and the last three items of questions concentrate on motivating teachers to take more responsibility.

Therefore, evidence respondents stated that PA experience in their respective schools was successful in improving instruction (mean = 4.51), enhancing teachers' professional development (mean = 4.57), aiding school administrators in passing decisions (mean = 4.17), and motivating teachers for more responsibility (mean = 4.23). This shows that a significant number of participants had the view that their PA had met its intended purpose.

The interviewees asserted that the purpose of PA is theoretically to achieve different goals. Nevertheless, the data from Interviewee TR didn't verify the findings presented in the table above. They brightly explained that the PA purpose in their respective schools is not meant to secure periodic

promotion, motivation, and scholarship. Likewise, concerning improving classroom preparation, however, they clarified that it had made an insignificant contribution. According to Interviewee SUP, "Currently, teachers' performance appraisal is used to upgrade the teacher's education status; otherwise, the contribution of performance appraisal in rewarding outstanding teachers in terms of finance, certificates, and moral support is negligible."

In the same vein, interviewees WMH and TH make clear that the purpose of PA is right now for "paper value," implying that PA experience in the sample schools rarely contributed to improving instruction, enhancing teachers' professional development, or making valid administrative and motivational decisions.

Independent t-test results under the subject of improving instruction ($D = 0.473$ and $p - value > 0.05$) indicate that there is no significant difference between the two schools. However, on the topic of identifying the strengths and weaknesses of teachers ($D = 0.038$ and $P - value 0.05$), this shows that there is a significant difference between the two schools.

Regarding performance appraisal criteria Performance criteria are statements of standards used for measuring job-related performance. For performance to be effective, it should encourage the

participation of employees in designing the organizational goal up to its implementation. This is also true in the education system, where all stakeholders

have to participate in all aspects of educational development activities.

Table 5: Performance appraisal purpose

No	Items related purpose of performance appraisal		1	2	3	4	5	Total	Mean
1	To improve the teaching-learning process	F	-	-	3	12	47	62	4.71
		%			4.8	19.4	75.8	100	
2	To identify the strengths and weaknesses of the teacher	F	-v	1	5	15	41	62	4.55
		%	-	1.6	8.1	24.2	66.1	100	
3	To decide on teacher's salary improvement	F	4	1	11	11	35	62	4.16
		%	6.5	1.6	17.7	17.7	56.5	100	
4	To enhance students' academic achievement	F	-	1	3	18	40	62	4.56
		%	-	1.6	4.8	29.0	64.5	100	
5	To offer a high-quality education	F	-	-	7	12	43	62	4.58
		%	-	-	11.3	19.4	69.4	100	
6	To identify training needs (training purpose)	F	-	5	4	10	43	62	4.47
		%	-	8.1	6.5	16.1	69.4	100	
7	To link teachers needs with the organizational goal	F	1	2	9	24	25	62	4.79
		%	1.6	3.2	14.5	38.7	40.3	100	
8	To help teachers develop professionally	F	-	1	8	15	38	62	4.45
		%		1.6	12.9	24.2	61.3	100	
9	To provide information on teachers' promotion & transfer	F	2	4	8	19	29	62	4.11
		%	3.2	6.5	12.9	30.6	46.8	100	
10	To control the overall performance of teachers	F	1	2	9	20	30	62	4.23
		%	1.6	3.2	14.5	32.3	48.4	100	
11	To improve the motivation of teachers	F	-	2	6	17	37	62	4.44
		%	-	3.2	9.7	27.4	59.7	100	
12	To provide feedback on teachers' performance	F	1	2	5	15	39	62	4.44
		%	1.6	3.2	8.1	24.2	62.9	100	
13	To serve as the basis for reward and punishment	F	6	2	11	20	22	62	3.82
		%	9.7	3.2	17.7	32.3	35.5	100	

The values are; strongly disagree =1; disagree =2; Undecided =3; agree =4; strongly agree = 5

As illustrated from Table 6, items 1–5, in the teachers' appraisal criteria, the group of respondents responded with their disagreement with the participation of teachers in the formulation of TPA, the clarity of the criteria objectives, the relevance of the TPA criteria, the measurements of teachers' professional competency, and the appraisal criteria that measure teachers' motivation to work. Almost all respondents showed their disagreement, and

the mean values were less than the expected mean, which was 2.44. This implies that the entire group of respondents opposed the participation of teachers in the formulation of the TPA. However, Q2, 3, 4, and 5, with respective mean values of 4.03, 4.29, 4.02, and 4.24, indicated that the group of respondents agreed on the issues related to performance appraisal criteria.

Table 6: Regarding Performance appraisal criteria

No	Items related to criteria of performance appraisal		1	2	3	4	5	Total	Mean
1	There is the participation of teachers in the formulation of criteria	F	6	6	9	21	20	62	2.44
		%	9.7	9.7	14.5	33.9	32.3	100	
2	The criteria used are clear	F	2	4	11	18	27	62	4.03
		%	3.2	6.5	17.7	29	43.5	100	
3	The criteria used are relevant to the purpose of PA	F	2	2	6	18	34	62	4.29
		%	3.2	3.2	9.7	29	54.8	100	
4	The appraisal criteria objectively measure teachers' professional competence	F	2	5	10	18	27	62	4.02
		%	3.2	8.1	16.1	29	43.5	100	
5	The appraisal criteria measure teachers' motivation to work	F	2	2	6	21	31	62	4.24
		%	3.2	3.2	9.7	33.9	50	100	

The values are; strongly disagree =1; disagree =2; Undecided =3; agree =4; strongly agree = 5

The interviewee believed that the criteria were already developed by the Ministry of Education framework and adopted by the SNNPR education bureau. Speak with SUP and TH. It is important to note that teachers do not participate directly in the preparation process; they know what is expected of them when they enter into a goal agreement with the principal before starting work. SC has no information regarding a teacher's participation in

the formulation of PA criteria. The independent t-test result regarding performance appraisal criteria, items of questions related to the participation of teachers in the formulation of criteria, the clarity of criteria used, the criteria relevant to the purpose of PA, the appraisal criteria measurement, and teachers' professional competence, and the appraisal criteria measure teachers' motivation to work.

Table 7: Independent samples T-Test for performance Appraisal criteria

Items	Sig.	Sig. (2-tailed)
There is a high participation of teachers in the formulation of criteria	.101	.216
		.276
The criteria used are clear	.232	.135
		.185
The criteria used are relevant to the purpose of TPA	.471	.917
		.926
The appraisal criteria objectively measure teachers' professional competence	.721	.949
		.950
The appraisal criteria measure teachers' motivation to work	.504	.852
		.867

Note: The Sig (2-tailed) is a two-tailed p-value used to evaluate the null hypothesis that the mean is not equal to 50, and a value below the alpha level indicates a statistically significant difference from zero.

Regarding Performance appraisal problems/challenges

Since teachers' performance appraisal is a complex activity, schools have faced problems in practicing it. These problems may be related to the skill and competence of evaluators; the operational process of the appraisal scheme and the perception of

teachers about performance appraisal; the bias of evaluators; the maturity level of evaluators; and the criteria. In this regard, some (nine) of teachers' performance appraisal problems were listed, and 62 of them were asked to rate those problems based on the Likert rating scale: very highly serious (5), highly serious (4), moderately serious (3), mini-

mally serious (2), and very minimally serious (1). According to Asfaw (2021), the mean scores from the data analysis were interpreted as 0.05–1.49

(very low), 1.5–2.49 (low), 2.5–3.49 (medium), 3.5–4.49 (high), and above 4.5 (very high).

Table 8: Regarding Performance appraisal problems/challenges

No	Items related to problem and challenges of PA		1	2	3	4	5	Total	Mean
1	Appraisers lack of the necessary knowledge & skill	F	9	8	13	17	15	62	3.34
		%	14.5	12.9	21	27.4	24.2	100	
2	Appraisers lack of the necessary experience	F	9	8	19	12	14	62	3.23
		%	14.5	12.9	30.6	19.4	22.6	100	
3	Poor administration of the overall process	F	10	9	15	15	13	62	3.19
		%	16.1	14.5	24.2	24.2	21	100	
4	Shortage of pre-appraisal discussion	F	9	10	11	13	18	62	3.5
		%	14.5	16.1	17.7	21	29	100	
5	Lack of post-appraisal discussion	F	2	4	8	19	29	62	4.11
		%	3.2	6.5	12.9	30.6	46.8	100	
6	The presence of negative perception of teachers about PA	F	6	7	12	19	18	62	3.58
		%	9.7	11.3	19.4	30.6	29	100	
7	The presence of inadequate and inappropriate appraisal criteria	F	10	6	17	17	12	62	3.24
		%	16.1	9.7	27.4	27.4	19.4	100	
8	Bias of evaluators that can replace organizational standards by personal values in the evaluation process	F	9	13	12	12	16	62	3.21
		%	14.5	21	19.4	19.4	25.8	100	
9	Students aren't mature enough to properly evaluate their teachers	F	8	7	9	15	23	62	3.61
		%	12.9	11.3	14.5	24.2	37.1	100	

In response to items 1–9, in the Performance Appraisal Problems/Challenges, the teacher respondents reply with the necessary knowledge and skills, the necessary experience, administration of the overall process, pre-appraisal discussion, and post-appraisal discussion, the perception of teachers about PA, inappropriate appraisal criteria, the bias of evaluators, and maturity to properly evaluate their teachers. Almost all respondents showed their agreement, and the mean values were greater than the expected mean (3:00), which were 3.34, 3.23, 3.19, 3.5, 4.11, 3.58, 3.24, 3.21, and 3.61.

On the other hand, the responses obtained from interviewees TR and WMH were forwarded with the following suggestions: *"Due to the lack of knowledge, skill, and experience of appraisers, they found that managing the appraisal process in their school was one of the more difficult tasks."* Interviewee SUP also argued that *"post-appraisal discussion is the most serious challenge in the teacher performance appraisal process."* Interviewees TH and SC, on their part, forwarded the following as the major constraints: *"Mostly higher levels of academic achievement"* students are involved in the

appraisal of teachers' performance. According to them, students ranked 1-3 mostly participated in teacher evaluations. Students do not have any training in PA, and sometimes they use the appraisal as a revenge mechanism. Most students were not aware of the purpose of TPA, so they simply filled out the form. Some students are regularly "biased in marking on matters unrelated to the performance of teachers."

4 Discussion

4.1 Practice of Teachers' Performance Appraisal

Regarding availability, in those sample schools, teachers' performance is evaluated on a regular basis or by procedure, and the schools have a planned way of letting the teachers know where they stand and how they are progressing. This means very large numbers of teachers were assured of the existence of performance appraisal practices in primary schools in the mentioned city.

Regarding the frequency of the occurrence of performance appraisals in the selected school, ques-

tionnaires and interviewee respondents revealed that there is teacher performance appraisal practice that occurs twice a year. Teacher evaluation should be conducted twice at the end of each semester (MOE, 1997). This is because not only are the rules established twice a year, but instructor performance ratings are also calculated each semester as part of the student assessment process. In this situation, teacher performance evaluation, formative use of performance appraisal, or making the best use of teacher evaluation data poses several issues and is used to decide on career promotion, give out performance advantages, or penalize instructors who don't perform at the same level.

Regarding appraisers of TPA, the result shows that the majority of participants (48, or 77.4%) claimed that the school principals are the main ones, and it seems like a solitary agent who evaluates their performance through inbuilt or other parts of performance related to the school system. However, appraisal of the performance of teachers requires participation from different stakeholders (MOE, 2002). Nonetheless, this shows that either the school leader is not willing to use other possibilities, such as self-appraisal, colleagues, etc., or may have other justifications. This issue needs further investigation. If employees are not allowed to evaluate themselves, they will become highly defensive during the appraisal review and may refuse to accept the evaluation result. It is also critical to understand the weak points of your coworkers.

The independent t – $test$ results in terms of the availability of formal PA in each school, regarding the frequency of PA in the two schools, and who is involved in the process of teaching PA ($D = 0.576$ and $p\text{-value} > 0.05$), ($D = 0.666$ and $p\text{-value} > 0.05$), and ($D = 0.355$ and $p\text{-value} > 0.05$), respectively, show that the mean of the appraisal practice didn't bring any statistically significant variation between schools, implying that the accuracy of the performance appraisal practice was almost the same across schools.

4.2 Performance appraisal purpose

In goal theory, Locke and Latham (2019) highlight mechanisms that connect goals to performance outcomes. The other theory Control theory emanates

from the work of Emile Durkheim and focuses attention on feedback as a means of shaping behavior (Glad & Ljung, 2018). The social cognitive theory was developed by Bandura. According to Beauchamp *et al.* (2019), it is based on his central concept of self-efficacy. This suggests that what people believe they can or cannot do has a powerful impact on their performance.

Regarding the purpose of performance appraisal, the study results indicated that teachers are not competing with each other based on their PA results for promotion or demotion. The investigation made it clear that the teachers' outcomes were undesirable. However, the wrong attitude of carelessly "using it" as if teachers must be promoted; there is also concrete quota promotion (professional training, upgrading) from teachers in the school. The purpose of performance appraisal was misused or interpreted negatively in this case.

In line with this, it is possible to explain why the interviewees reflect the purpose of PA destructively. The researcher suggested that the current system of performance appraisal is conducted only for procedure purposes, and there is no way to accomplish its purpose properly. When there is an opportunity for benefit, the quota and the type of subject will come together, and the teacher who does not perform well will possibly benefit from the quota. In the same way, promotion is associated with a pay raise, but all teachers benefit from promotion, even if they do not perform well. This means that the purpose of teacher evaluation has failed.

Independent t – $test$ results under the subject of improving instruction ($D = 0.473$ and $p\text{-value} > 0.05$) indicate that there is no significant difference between the two schools. However, on the topic of identifying the strengths and weaknesses of teachers ($D = 0.038$ and $P\text{-value} 0.05$), this shows that there is a significant difference between the two schools. Therefore, the aim of performance appraisal in school B is to help the appraisers identify the strengths and weaknesses of teachers and support them based on evidence accordingly, but in school A, the topic of identifying the strengths and weaknesses of teachers is not reasoned. This indicates that in school B, there is formative assessment practice, while in school A, there is no formative

assessment practice at all. Glad & Ljung (2018) and Ozbay (2019), a control theory, focus attention on feedback as a means of shaping behavior. Thus far, the rest of the questions Q 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, and 20 have independent *t* – test results ($D = 0.473, 0.724, 0.265, 0.584, 0.996, 0.772, 0.086, 0.846, 0.42, \text{ and } 0.588$, respectively). This shows that with a $P\text{-value} > 0.05$, there is no significant difference between the two schools regarding the above points of the question of TPA.

4.3 Performance appraisal criteria

In this regard, respondents were asked to evaluate the appraisal criteria that have been practiced in the sample school. The result shows that the mean values (2.44, 4.03, 4.29, 4.02, and 4.24) and weighted mean (3.8) were above the ideal mean (3). The mean value of the Q is 2.44. This implies that the majority of respondents opposed the idea. According to Nadot (2022), nevertheless, any small defect in the procedure may lead the practice to complete failure. However, in the teacher's appraisal system, the group of respondents expresses their disagreement with the participation of teachers in the formulation of PA.

In line with this, the interview group made public that there was no teachers' participation in the formulation of the TPA criteria. The interviewee believed that the criteria were already developed by the Ministry of Education Framework and adopted by the SNNPR Education Bureau. The interview group made it clear that teachers do not participate directly in the preparation process; they know what is expected of them when they enter into a goal agreement with the principal before starting work. It is also important to understand if there are any questions or concerns that you do not understand. According to the results of the survey and the interview, one of the reasons why teachers do not participate directly in the preparation of the assessment criteria is that the assessment criteria have already been developed by the Ministry of Education and sent to all regions. The second is that when teachers agree on a goal with the principal, they discuss the key, major, and minor tasks in depth and ensure understanding.

According to the information obtained from the

document, the criteria for the evaluation of the performance of teachers transferred from the Ministry of Education and the criteria prepared by the principals of both sampled schools are the same. This does not make teachers see themselves as stakeholders who attempt to achieve the school's goals and objectives rather than being directly involved in setting standards. As Sewagegn (2019) stated, when preparing the teacher's performance appraisal standard, if the teacher knows as much as possible about the standard that is being evaluated, there will be many benefits.

The independent t-test result regarding performance appraisal criteria, items of questions related to the participation of teachers in the formulation of criteria, the clarity of criteria used, the criteria relevant to the purpose of PA, the appraisal criteria measurement and teachers' professional competence, and the appraisal criteria measure teachers' motivation to work ($p\text{-value} > 0.05$) shows that the mean of the appraisal exercise regarding the criteria didn't bring any statistically significant variation between schools, implying that the accuracy of the performance appraisal criteria was almost the same in two schools.

4.4 Performance appraisal problems and challenges

In this regard, nine of the teachers' performance appraisal problems were listed, and 62 teachers were asked to rate those problems based on the Likert rating scale very highly serious (5), highly serious (4), moderately serious (3), minimally serious (2), and very minimally serious (1). According to Asfaw (2021), the mean scores from the data analysis were interpreted as 0.05–1.49 (very low), 1.5–2.49 (low), 2.5–3.49 (medium), 3.5–4.49 (high), and above 4.5 (very high).

Therefore, the mean score of participants in the three items, Q.36, 38, 41, and 30, was related to the maturity level of evaluators (3.61), the negative perception of teachers towards performance appraisal (3.58), the shortage of pre-appraisal discussion (3.5), and the shortage of post-appraisal discussion (4.11).

Participants were rated as having highly serious

problems, with a mean score ranging from 3.5 to 4.49. While, again, looking at the mean score of the five items, Q33, 34, 35, 39, and 40, they related to poor administration (3.19); lack of skill and knowledge (3.34); experience with regards to PA (3.23); adequate criteria (3.24); and evaluator bias (3.21), which was rated as a moderately serious problem by participants with a mean score ranging from 2.5 to 3.49.

On the other hand, the interview with them also disclosed that due to the lack of knowledge, skill, and experience of appraisers, they found managing the appraisal process in their school to be a difficult task. They indicated that lack of necessary training of appraisers and low participation of teachers when teachers' performance appraisal criteria were developed as the number one major problems of TPA in their schools. For, students with mostly higher levels of academic achievement are involved in the appraisal of teachers' performance (Almutairi & Shraid, 2021). Students do not have any training concerning PA, and sometimes they use the appraisal as a revenge mechanism.

As LEMJI (2019) also argued, post-appraisal discussions between the assessed and the appraiser are a highly serious challenge in the teacher performance appraisal process. The *t* – *test* analysis for the data in both (school A and school B) government primary schools indicates that there is no significant difference between the two schools.

5 Conclusions

Formal teachers' performance appraisals are often conducted twice a year. The practice is measured in terms of accessibility and frequency of occurrence. Although the guidelines state that many stakeholders are involved, the principal is the one who has the highest share. This is outside of the guidelines and can lead to biased results. Every teacher gets promoted when it comes to performance; every teacher gets a pay raise and benefits. On the contrary, teachers who do not show the proper quality and results in the work of the school may be prevented from progressing under the excuse of quotas. Either way, the process is unfair. Teachers are not competing with each other and are promoted as long as they meet the criteria. Teachers expressed

satisfaction with the suitability of the standards. However, they feel that other points that should be included have been left out because they were not involved in developing the appraisal criteria. Here, the evaluation criteria come from the Ministry of Education, but they remain localized. Rather than presenting another alternative, the principals copied the requirement from the guidelines and gave it to us to implement, so this opens the door to influence and can be a hindrance to achieving the school's goals.

According to the findings, insufficient training for evaluators is a critical issue in addressing the challenge and problem at hand. For example, the evaluators selected from among the students use the appraisal of the teachers to take revenge on the appraiser. Moreover, the lack of teacher participation in the development of performance evaluation criteria for teachers is a significant area for improvement. The absence of post-evaluation discussions, teachers' difficulty in identifying their weaknesses, and their low regard for the importance of school improvement are additional factors that contribute to the problem. Consequently, teachers may perceive evaluation results as lacking relevance to their professional growth.

Recommendations

Drawing from the aforementioned conclusions, the following recommendations are suggested: Schools in the study area must implement formal teacher performance appraisal systems and practices, typically conducted on a biannual basis. However, it is crucial to note that these practices often appear superficial and aim to fulfill bureaucratic requirements rather than foster genuine improvement. A fundamental shift in perspective is therefore necessary. To address this issue, school leaders ought to utilize teacher performance appraisals as a means of driving strategic, developmental, and communicative initiatives, with the ultimate goal of enhancing teacher academic and professional competencies as well as overall school performance.

Concerning the intended purpose of performance appraisal, the author of the study proposes the following recommendations: school administrators should carefully consider the objective of teacher

performance evaluations and carry them out according to relevant guidelines and objectives. Additionally, it is suggested that each school establish its own comprehensive teacher performance evaluation plan to optimize the system's operation and implementation. This plan, along with the school's strategic objectives, should be communicated to all stakeholders and experts. Furthermore, it is recommended that school principals design tailored training programs for teachers and implement a performance-based reward system to motivate superior performers.

The criteria for evaluating the performance of teachers are primarily formulated at the central level, and there is a sense of dissatisfaction among teachers that these criteria do not take into account the contextual situation, including differences between schools and the lack of participation of teachers in the process. To address this issue, the Education Bureau should ensure that assessors are involved in the preparation of evaluation criteria in appropriate circumstances. School leaders and experts should also consider the current situation of the schools and contextualize the appraisal criteria in a way that can enhance the capacity of teachers. To avoid problems with teacher performance evaluations, it is important to use interpersonal communication and set evaluation criteria without personal or political interference. In addition, recruiting older students to serve as student appraisers and providing adequate training on academic and social relationships can help address the issue.

Conflict of Interests

The authors declare that there is no conflict of interest.

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Repercussion of Higher Education Reform: In the Case of Mathematics Department Students before and after the reform in One of the Universities in Ethiopia

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Abstract

This study sought to examine how mathematics department students of public universities in Ethiopia were affected by recent reforms in higher education. A descriptive survey design was used to carry out the investigation. A total of 86 mathematics students participated in the study. It filled out achievement test questions, 30 of whom joined the department after taking the new reform's freshman course in 2020 and 30 and 26 of whom joined the department before the new reform's freshman course was delivered in 2019 and 2018, respectively. A 40-item achievement test on elementary concepts of algebra in mathematics was used as an instrument for the study. Out of 40 concepts, the mean scores reported by students who joined the Department of Mathematics after and before taking their freshman course were 19 and 15 respectively. Moreover, there was a significant difference in students who joined the Department of Mathematics after and before the new reform and took the freshman course regarding understanding and solving elementary algebraic concepts of mathematics with equal variances, not assumed to be $p = 0.040$ less than $p = 0.05$ level of significance. It is therefore recommended that it is essential to improve mathematics success for all students and that the new freshman course reform plays a significant role in increasing students' mathematics success rate. This study has proven that they are trainable, and therefore, the new reform of freshman courses has to be nurtured for all students.

1 Introduction

1.1 Background of the Study

Ethiopia, a country in the Horn of Africa, is surrounded by Kenya in the south, Sudan and South Sudan in the west, Somalia in the east, Eritrea in the north, and Djibouti in the northeast. Ethiopia's formal name is the Federal Democratic Republic of Ethiopia, and it is a federal parliamentary republic with twelve regional states and two city administrations (FDRE). Ethiopia is the second most populous nation in Africa, with a population of about 115 million (Boateng, 2020). Amharic is the country's official working language. It has 90 different languages or dialects (Boateng, 2020). The strategic

role of education as a tool for a nation's growth and social advancement is well acknowledged. Not this point, but the effects and results of reform in terms of economic and social development policies, as well as implementation, financing, quality, and effectiveness, which are all desired by all the actors involved in this transformative vision, are the main topics of discussion on a global scale (Vasquez-Martinez *et al.*, 2013).

Ethiopia is currently engaged in an ambitious reform process to guarantee the sustainability of its economic development and prosperity. The country's expanding need for skilled laborers was not able to be met by the education strategy, which

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was in place for more than 20 years. The new reform may therefore aid in focusing efforts on reshaping the system and assuring quality above quantity (Mengisteab, 2021). This was due to a focus on quantity rather than quality. Among these reforms, education has been a foremost priority for the government since the coming to power of Prime Minister Abiy Ahmed in 2018. Though the concept of reforming the education sector had been a topic of discussion before his ascent, these reforms were initiated in earnest just over a year ago. As a starting point for the reforms, Roadmap, (2020) stated that the government accepted that previous attempts at educational reform had yielded mixed results. The reform, which is being introduced by the new government, has opened an opportunity to foster holistic development throughout the nation and will have a key role in producing competent professionals who can compete effectively in the labor market and equipping them with the skills needed to promote sustainable development (Mengisteab, 2021).

In addition, the reform has a key role in addressing gaps in higher educational institutions, which are the main sources of skilled and educated manpower. This gap has put a question mark on the country's ambitions for rapid industrialization, as rapid industrialization depends on the availability of highly skilled and competent manpower that can execute activities accordingly. In this regard, quality education is a foundation that can play a pivotal role in shuttering skill shortages and knowledge gaps. Educational changes necessitate a broad evaluation of their motivations, goals, implementation, and outcomes by people who work in the educational systems where they are implemented (Vasquez-Martinez *et al.*, 2013).

Higher education in Ethiopia includes several positive aspects as well as some systemic, pervasive problems. The reports' limited ability to encourage development stems from the fact that they are currently confidential to institutions and the government (Ashcrof & Rayner, 2011). Reform's primary objectives are to assist students in connecting and applying these concepts to real-world contexts, as well as in better understanding the fundamental concepts and issues in a variety of courses. This calls into question the usefulness of change in the

mathematical community. It is expected that the reform will progress to produce competent mathematicians. Reform may have the advantage of educating students about the typical steps involved in practicing mathematics, such as formulating hypotheses and seeking out counterexamples. It has also enhanced mathematics by promoting the use of real-world examples.

1.2 Statement of the Problem

The Ethiopian government prioritized science, technology, engineering, and mathematics (STEM) subjects. Since its inception, one of the principal goals of mathematics education has been to raise the interest of students in mathematics subjects, develop their capacities to engage in scientific inquiry, develop their problem-solving capacity, and teach them how to reason in a scientific context. Among many problems observed in the Ethiopian education system, students' low achievement in mathematics was the major one. The imperative in recent years about improving student outcomes is also about improving the quality of the teaching workforce. Students' quality itself is an important factor in determining gains in student achievement. The main motive for investigating students' background knowledge is to improve student outcomes. On the other hand, to improve students' quality, it is crucial to understand what their background knowledge involves.

Thus, this study focuses on students' background knowledge as a key factor in their performance in mathematics. Several studies (Bekele, 2019; Prescott, 2022; Starke, 2021) stress the importance of the background knowledge students hold. Before higher education reform, students joined the Mathematics Department as their last chance to stay in university. The mathematics departments are accepting such uninterested candidates that they even have no awareness of the basic mathematical operations and concepts.

In recent years, it has become increasingly difficult to recruit and retain qualified BSc Mathematics students. There is also concern about attracting high-achieving and motivated candidates to BSc mathematics programs. To overcome the mentioned problems in teacher education in hard science courses

like mathematics in particular and the education system in general, the Ethiopian government prepared the Roadmap with the purpose of: fostering holistic development in all citizens; equipping citizens with confidence and competence; promoting critical thinking; producing competent professionals to compete effectively with their counterparts in the global marketplace; spurring entrepreneurship and innovation within a framework of social responsibility; and building a citizenry with strong ethical and moral values based on the pursuit of justice, peace, and unity in diversity (Roadmap, 2020).

More specifically, the roadmap recommends a fundamental shift in the way that education is administered and practiced in the country, calling for an educational system founded on indigenous knowledge that is supportive of national development goals and encourages civic engagement (Roadmap, 2020). Though the Roadmap's ambitions and implementation are still in their infancy, the course it charts is welcome news for an educational sector, particularly for mathematics in need of reform and mathematics desperate to unleash the untapped potential of its best and brightest. In order to alleviate the problem fundamentally, examine its implications for the instructional process, and derive evidence-based suggestions for educational policy, it is necessary to conduct a study on the impact of the currently underway reform of higher education from wider or narrow perspectives. .

In any study of mathematics, the language of mathematics plays a vital role (Thangarajah, 2020), which is intended to provide a comprehensive and rigorous account of the basic concepts and materials from mathematics that necessitate a good foundation to treat fundamental mathematical tools in science. The newly launched Ethiopian higher education reform, the first-year freshmen mathematics course for natural science, rigorously discusses the basic concepts of logic and set theory, the real and complex number systems, mathematical induction, least upper bound and greatest lower bound, functions and types of functions, polynomial and rational functions, logarithmic and exponential functions, trigonometric functions, hyperbolic functions and their graphs, and analytic geometry (MOSHE,

2020). Accordingly, to see the influence of this reform on students' achievement in the department of mathematics in the narrow sense of assessing its impact, this study was guided by the following general and specific objectives.

1.3 Objectives of the Study

The objective of this study is to see the repercussions of higher education reform on students who join the mathematics department.

Specific objectives

- To investigate the achievement of freshmen students on the basic language of mathematics concepts before and after the reform;
- To exhibit the significant difference in basic mathematics achievement results of freshman students before and after the reform that joined the mathematics department for the bachelor's science program.

1.4 Hypothesis

H₁: There is a significant difference in the basic mathematics achievement results of freshmen students who joined the mathematics department for the Bachelor of Science program before and after the reform.

1.5 Significance of the study

It is important to see the impact of the new higher education reform in Ethiopia, even though over the past 27 years, education in Ethiopia has made progress in quantitative but not qualitative terms (Yadessa & Shemelis, 2022). The higher education system is fraught with challenges and issues bordering on quality. The common goal is to create a healthy educational environment for students (Hui-Ling & Chien, 2017). And nobody would deny the strategic nature of education as a vehicle for development and social progress. The focus of global discourse on the topic is not this particular point, but rather the quality and effectiveness of the reform's effects and consequences, which are what all the parties involved in this transformative vision want to see (Vasquez-Martinez *et al.*, 2013). The advantages of reforms and the degree

to which they will be advantageous are often unclear. Many students of mathematics suffer greatly from this uncertainty. It appears crucial to evaluate the relative advantages of reform in mathematics improvement. Above all, there's a big difference in timing between when the original educational reform is implemented and when it becomes clear whether or not the change will have the desired effects.

2 Research Method

2.1 Population and Sample

This study was conducted on students who joined the department of mathematics at one of Ethiopia's universities. The study population consists of mathematics department students. By convenience sampling techniques, there were 86 mathematics students, of whom 30 joined the department after taking the new re-form's freshmen course in 2020 were categorized in one group, 30 students who joined the department in 2019 and another 26 students who joined the department in 2018 (both groups joined the department before the new re-form's were categorized in another group), and all participated in the study at entry point to the department, *i.e.*, department placement.

2.2 Design of the Study

The researchers devised a quantitative case study to investigate the effects of the new higher education reform on mathematics students at a single Ethiopian university. Quantitative data was analyzed based on descriptive and inferential statistics. Descriptive statistics were examined to get the percentage, mean, and standard deviation; inferential statistics were examined by using the *t* – *test* to determine whether there was a significant difference between two groups on basic elementary mathematical concepts. A significant difference between two groups has been tested at the 0.05 level of significance because of the possibility of a level of significance between 0.01 and 0.1. This research was designed to investigate the extent of the repercussions of new reforms in higher education on mathematics students at one Ethiopian university.

According to Anderson and Krathwohl's Taxonomy (2001), understanding different types of func-

tions means constructing meanings of activities and graphic messages by writing, exemplifying, classifying, inferring, comparing, or summarizing (Anderson & Krathwohl, 2016). Based on this taxonomy and the researcher's understanding of basic elementary mathematics concepts, the researcher prepared the achievement test question from the Mathematics Review Manual (Lovric, 2009) and from other related studies. Two of the researcher's colleagues had examined the validity of a test prepared by the researcher using basic elementary mathematics concepts. A retest was performed in a 30-minute interval to determine the reliability of test instruments, and its correlation was 0.998, indicating that the test instrument is reliable. The prepared test has been delivered for 2018 and 2019 entries to the mathematics department to examine their background knowledge of basic mathematics, and then, having the results of the previous two groups as one group, the achievement test was adopted for 2020 entry students that joined the department after the new reform of the refresher course in 2020.

2.3 Data Analysis Technique

The researcher distributed the prepared tests, which were then gathered for analysis. Thus, the collected data were organized, interpreted, and analyzed using a percentage, mean, standard deviation, and independent *t* – *test*, followed by analyses from which summaries and conclusions were drawn. The associated values of the degree of agreement were multiplied by a number. The rating was calculated by dividing the total number of respondents by the sum of the products of value and frequency. The ground mean was then calculated by adding all rating means within a category and dividing the result by the total number of cases. An interpretation was made based on the ground mean, and conclusions were drawn on the fundamental questions. The standard deviation was used to show how far responses had been scattered from the grade mean. To assess the significant difference between two groups' achievement of basic elementary mathematics concepts, a *t* – *test* was conducted and a detailed analysis was made.

3 Results

The analyses of the data took place based on two statistical methods: descriptive statistics (percentage, mean, standard deviation (ST. DV), skewness, and kurtosis) and inferential statistics ($t - test$). Then, the interpretation of hypotheses regarding the differences in basic mathematics achievement results between students who joined the department before the reform (*i.e.*, 2018 and 2019 entries) and those who joined after the reform (*i.e.*, 2020 entries) was used. The descriptive frequency and percentage of

statistical findings from students who understood the fundamentals of mathematics on those chosen topics were reported as follows:

To explore the baseline of students' background knowledge of those selected basic concepts of mathematics, students were made to take the test question at the first class of the school year of their first membership in the Mathematics Department. Descriptive statistics were used to examine students' background knowledge on selected basic concepts of mathematics as follows:

Table 1: Descriptive statistics: students' test questioner result on selected basic concept of mathematics out of 40

Group	Mean	N	Std. Dv	Variance	Kurtosis	Skewness
After the New Reform	18.9149	30	9.82196	96.471	-.776	-.034
Before the New Reform	15.0385	56	8.59996	73.959	-.922	.266
Total	16.8788	86	9.35717	87.557	-.844	.168

Table 1 shows the means, standard deviations, skewness, and kurtosis for test questions by class. As the table shows, there is a mean difference between the two groups with the data distributions being skewed on the left side (-.034), indicating that Mean < Median < Mode, whereas the data distributions are skewed on the right side (.266), indicating that Mean > Median > Mode. Although the two groups' kurtoses are -.776 and -.922, indicating that the distribution of the result is relatively flat.

To test the Hypothesis

N1: There is a significant difference in the basic mathematics achievement results of students who

join the department mathematics before and after the new reform.

The Levene test of the test questioner is detected ($Sig = 0.475$), which indicates no violation of homogeneity between the two groups. If the p-value is significant (less than 0.1 at a 90% confidence level), the variance of the subgroups is not homogeneous and is estimated using Tamhane's T2 (Gupta, 1999), but because the data is homogeneous, an Independent Samples Test was performed using equal variances rather than the assumed $Sig (P) = 0.040$, which supports the alternative hypothesis that there is a significant difference in the basic mathematics achievement results of the study.

Table 2: Independent Samples Test

		Levene's Test for Equality of Variances		$t - test$ for Equality of Means						
		F	$Sig.$	t	df	$Sig.$ (2-tailed)	Mean Difference	Std. Error Difference	95% CI of the Difference	
G345	Equal variances assumed	.514	.475	2.094	97	.039	3.88	1.85	.20157	7.55
	Equal variances not assumed			2.080	91.99	.040	3.88	1.86	.17417	7.57

Graphical representation of the distribution of two groups is shown as follows

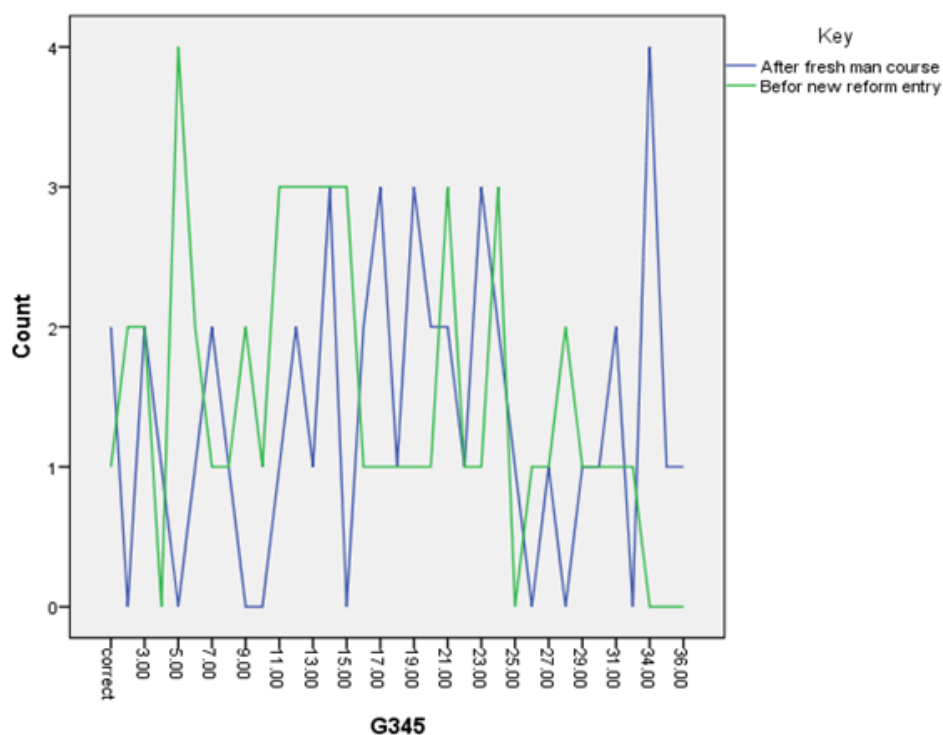


Figure 1: Distribution of two groups

4 Discussion

The current study contains an analysis of the repercussions of higher education reform on students who join the mathematics department. As table 1 shows, from the definition of skewness and kurtosis: "Skewness" characterizes the symmetry of the collected data distribution. If the distribution of data is skewed to the left, we call it negatively skewed. This occurs when $\text{mean} < \text{median} < \text{mode}$ is used. If the distribution of data is skewed toward the right, we call it positively skewed. When $\text{mean} > \text{median} > \text{mode}$, this occurs (Brown, 2011). According to Brown (2011), kurtosis gives information about the group distribution of peakedness or flatness compared to the normal distribution. Whereas the distribution of positive numbers is relatively peaked, the distribution of negative numbers is relatively flat (Brown, 2011).

As can be seen from above, the data distributions are skewed on the left side (-.034), indicating that $\text{Mean} < \text{Median} < \text{Mode}$, whereas the data distributions are skewed on the right side (.266), indicating

that $\text{Mean} > \text{Median} > \text{Mode}$. Although the two groups' kurtosis is negative, indicating a relatively flat.

We presented some of the students' work below to triangulate the achievement of students in the two groups, *i.e.*, before and after the reform, respectively. Errors were mainly seen when adding, subtracting, and exponentiating the power of zero of exponential expressions in a term. Students who had not taken the freshman course prior to the reform were more affected than students who had taken the freshman course after the reform. Students who had not taken the freshman course had difficulties with both operation and direction signs and demonstrated too many misunderstandings when working with signs. The researcher realized the impact of the new reform refreshment course on some concepts in mathematics. The following are samples of five students' work before and five students' work after the new refreshment reform to demonstrate the problem of computations in simple mathematical language from both sides, presented below.

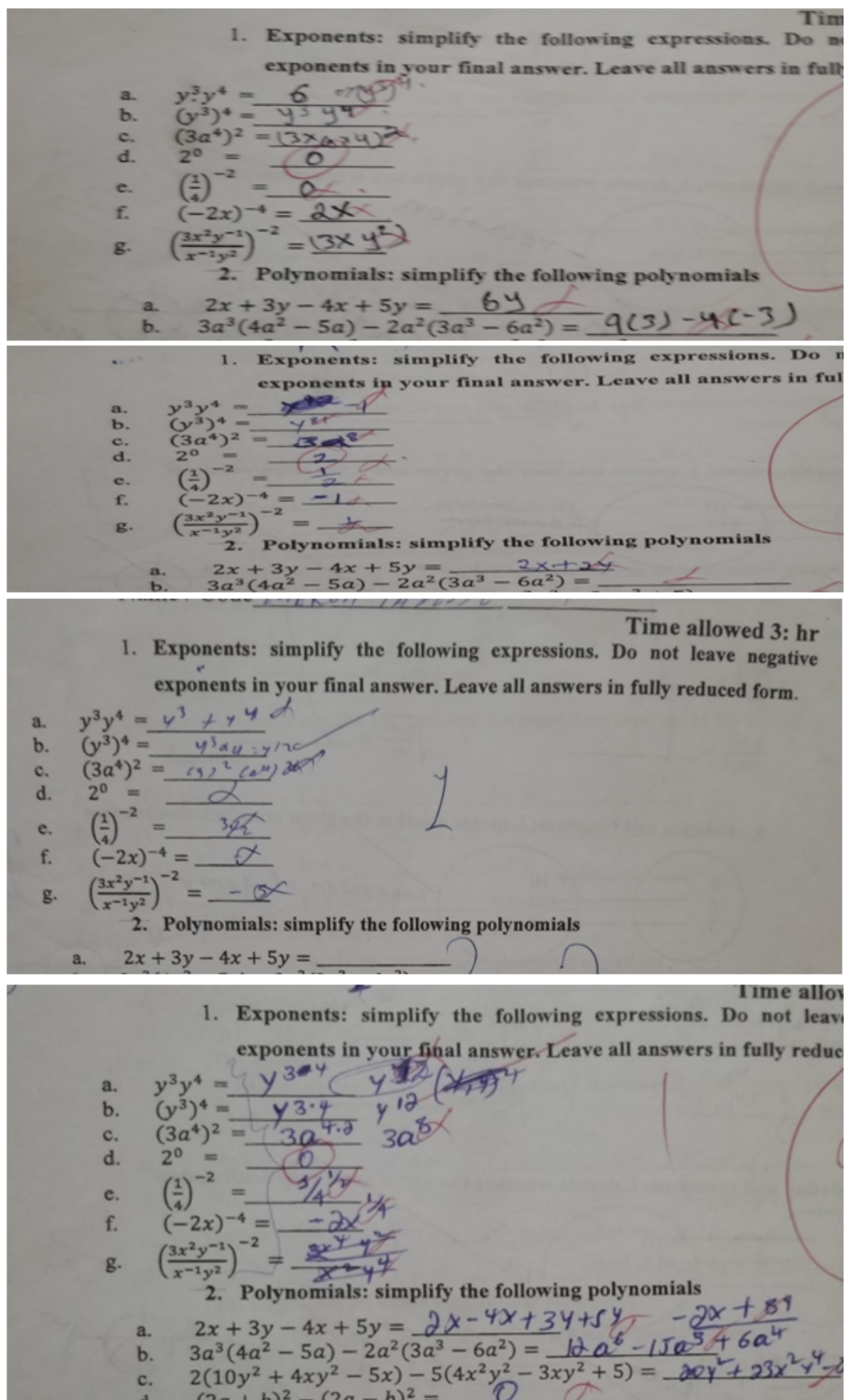


Figure 2: Five students work before new reform

Let see some of students work from the second group (among the students after the reform)

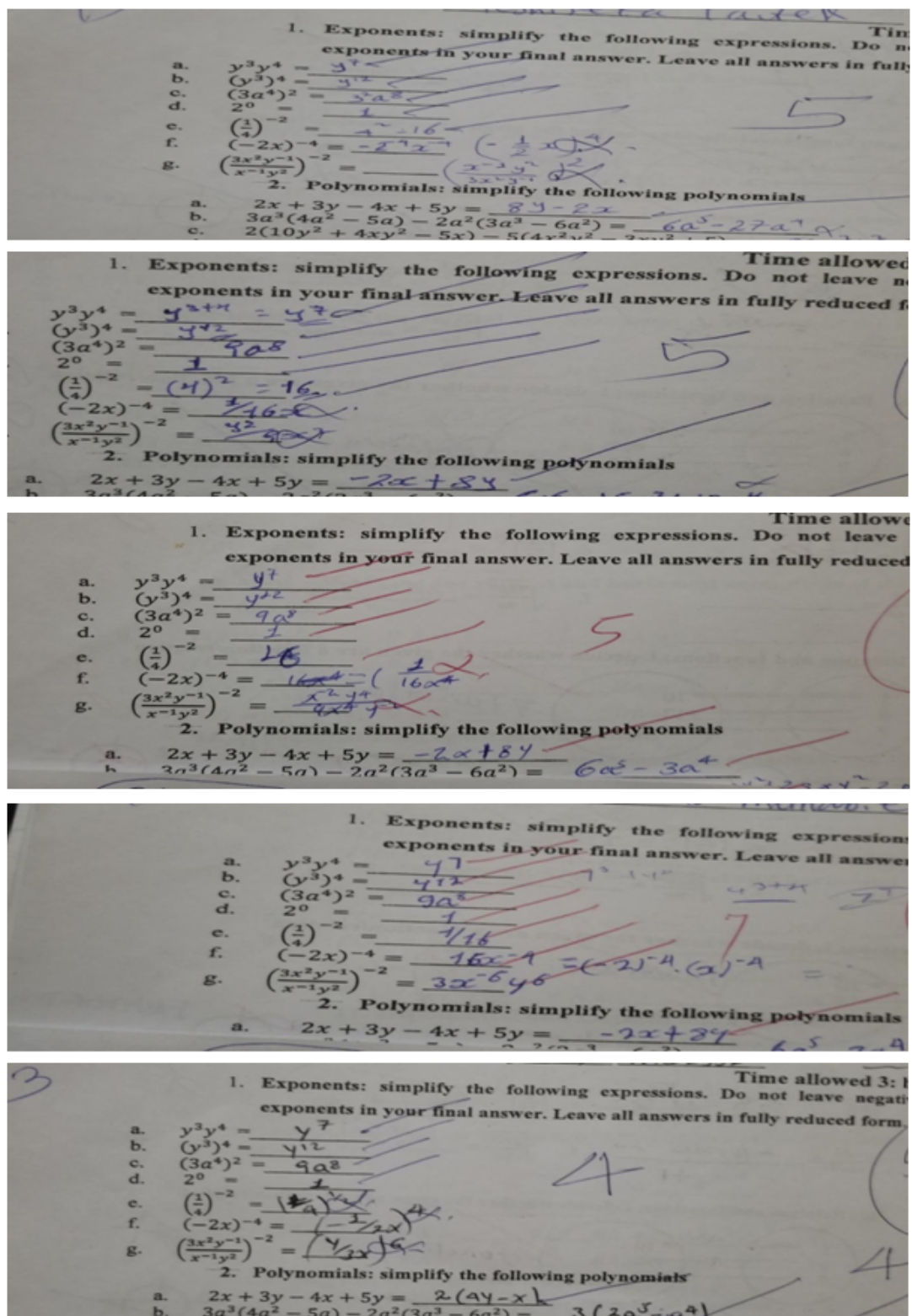


Figure 3: Five students work after they took new reform course

The impact of the reform on students can be seen in some of the simple mathematical computations selected from the above two images.

From table 2, the significance level is $Sig (P) = 0.040$, which is less than 0.05, which supports the alternative hypothesis that there is a significant difference in the basic mathematics achievement results of the study. Figure 1 also shows the distribution of results for the two groups.

5 Conclusions

The extent of achievement of students who took the freshman reform course versus those who entered university before the freshman program launched and did not take the freshman reform course towards the basic language of mathematics concepts on their first day at university was investigated in this study.

Groups that took the reform refreshment course outperformed those who did not and who joined the mathematics department before the reform refreshment course. Students who took the refreshment course in the new governmental reform performed better than those who didn't have the opportunity to pass through the reform's freshmen course.

The finding specifically indicates that students who took the mathematics refresher course (Math. 101) performed better than those who did not take the basic language of mathematics course in their freshman year.

As a result, the key contribution of this finding is that: (1) the new reform of the freshman course plays a significant role in improving the success of all students in mathematics. (2) To increase the success rate of students in mathematics, this study has proven that they are trainable [not clear], and therefore, the teachers who give new reforms to freshman courses have to nurture all students.

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Influence of social media utilization and parent adolescent communication on academic- achievement of secondary school students in south Ethiopia

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Abstract

This research investigated how the use of social media and the nature of parent–adolescent communication affect students’ academic performance at Hodo Public Secondary School. The key questions guiding the study were: (1) Do social media usage and parent–adolescent communication predict academic outcomes? (2) To what degree do students engage in social media use and communication with parents? and (3) Are there gender differences in social media utilization? A cross-sectional design was employed, applying both stratified and simple random sampling techniques. From a total of 487 students, 253 participants were selected, including a 10% contingency, along with nine teachers chosen for interviews. Primary and secondary data were gathered and analyzed. Quantitative data were treated using descriptive statistics (mean, standard deviation, and percentage) and inferential tests (linear regression, one-sample t-test, and independent t-test) in SPSS Version 20. Qualitative data were coded, categorized, and organized into concepts based on notes and audio recordings. The findings demonstrated that both social media use and parent–adolescent communication significantly predicted academic achievement ($p = .034$, $F(2,216) = .101$). The study also found significant differences in the extent of social media usage ($M = 1.90$, $SD = 2.63$; $t(219) = 1.498$, $p = .046$) and parent–adolescent communication ($M = 2.57$, $SD = 3.50$; $t(219) = 1.736$, $p = .012$). However, no meaningful difference was observed between male ($M = 65.97$, $SD = 3.950$, $n = 152$) and female students ($M = 65.97$, $SD = 3.950$; $t(67) = 1.576$, $p = .049$) in terms of social media usage at the .05 significance level. Overall, the results suggest that both social media engagement and parent–adolescent communication exert a significant influence on secondary school students’ academic performance. Therefore, parents, teachers, school counselors, and policymakers should collaborate to create awareness programs that encourage responsible social media use and enhance students’ educational outcomes.

1 Introduction

1.1 Background of the Study

Several research findings have consistently revealed that senior secondary school students often perform poorly in their academics (Kolawale & Dele, 2012; Aina & Olanipekun, 2014). Aina and Olanipekun (2015) further pointed out that the declining performance in both secondary and higher education is a matter of serious concern. This issue is not only worrisome to students but also to parents, teachers,

and education stakeholders across the globe. In Ethiopia, one of the measures introduced to address the problem is the School Improvement Program, which aims to raise the standard of teaching and enhance students’ academic results (MoE, 2016).

A range of factors inside and outside the learner’s environment can affect academic success, among which the use of social media and the quality of communication between parents and adolescents

are increasingly critical. Social media has become an integral part of modern life and exerts a particularly strong influence during adolescence, a period marked by evolving parent–child communication patterns (Smetana *et al.*, 2015). While supportive parenting is important for promoting independent functioning, inappropriate handling of parental roles may negatively affect learners' academic outcomes and behavior (Suizzo, 2020).

Nalwa and Anand (2018) describe social media as a digital communication tool that enables users to interact, exchange, and discuss information, ideas, personal messages, and multimedia content through internet-based platforms. Similarly, Ahn (2019) defines it as a medium that fosters interaction among people within virtual communities where they generate, share, and exchange knowledge and ideas. Students often engage in these platforms to seek new information, share knowledge, participate in research networks, and pursue academic interests as part of online learning communities (Kuppuswamy & Narayan, 2018). The growth of social media has brought both advantages and disadvantages to society (Dhaha & Igale, 2013).

According to other evidence, its negative consequences become more evident when students multitask with social networking platforms during classes, which leads to reduced academic focus and lower achievement (Nicole, 2017).

Parents also have a crucial role in shaping adolescents' development. The boundaries and quality of their communication significantly influence adolescents' behavior (Rodríguez-Fernández *et al.*, 2019). Strong parent–child communication can act as a protective factor against risky behavior (de Looze *et al.*, 2012) and contributes to positive developmental outcomes (Grolnick *et al.*, 2015). Academic achievement has been linked to effective parental communication (Wang & Sheikh-Khalil, 2014). Research shows that parental involvement and warmth from both parents support adolescents' school engagement and performance (Wang & Sheikh-Khalil, 2014). Some studies highlight a positive connection between parental communication and academic outcomes (Brajša-Žganec *et al.*, 2019; Otani, 2020), though others indicate little or even negative associations when communication is lacking (Bronstein

et al., 2015).

Parent–child discussions also transmit values, beliefs, and emotions, which influence adolescents' behavior (Hollmann *et al.*, 2016). Positive communication has been associated with improved school performance in adolescents (Trung & Ducreux, 2013).

Academic achievement generally refers to how well students handle their academic responsibilities and complete school tasks (Kimberly *et al.*, 2019). Ward, Stoker, and Murray-Ward (2016) similarly defined it as an educational outcome that indicates the extent to which learners and institutions meet their learning objectives. Such achievement is typically measured through semester averages or examination scores and is a concern for low-performing learners at both secondary and tertiary levels (Kolawale & Dele, 2012).

As a result, the researchers feel that further study is needed to better understand the influence of social media utilization and parent-adolescent communication on academic achievement among secondary school students. Therefore, the primary goal of this study is to examine the impact of social media utilization and parent-adolescent communication on academic achievement among Hodo secondary school students in the Kembeta Temaro zone of southern Ethiopia.

1.2 Statement of the Problem

In today's world, rapid technological advances are reshaping everyday life, with social media becoming a dominant presence in the routines of students and significantly altering their behaviors. At present, the majority of young people and learners maintain Facebook accounts. As Kuppuswamy and Narayan (2018) observed, students are often so deeply engaged in these platforms that they spend nearly the entire day online. This high level of involvement brings several academic drawbacks, as learners may abandon their studies in favor of chatting, texting, or gaming. Similarly, Nicole (2017) emphasized that students who are addicted to social media frequently devote their time to conversations unrelated to schoolwork, pay little attention during instructional hours, and find it difficult to concentrate while studying. Research also

shows that students often multitask across different sites and consume large amounts of information at once (Nalwa & Anand, 2018; Nicole, 2017). Even within classrooms, some learners remain preoccupied with messaging or browsing Facebook while lessons are in progress.

Other investigations have revealed additional challenges. For instance, Obi, Bulus, Adamu, and Sala'at (2012) highlighted that constant use of these networks negatively affects English usage and grammar. Students commonly rely on abbreviations and shortened forms in chats, such as “4” for for, “U” for you, and “D” for the, which then surface in academic writing and harm classroom performance.

Beyond the issue of social media, ineffective or absent communication between parents and adolescents is another key factor contributing to school-related difficulties. Poor communication within families often produces adjustment challenges for students, including negative attitudes toward learning, reduced motivation, low self-concept, poor performance, and misbehavior. Moreover, exposure to negative experiences on social networking sites has become common among adolescents, raising concerns for educators about its potential to lower students' self-esteem and undermine academic outcomes when coupled with weak parent–child communication (Satir, 2013).

However, there were no studies done on the aforementioned issues concurrently in the same study. In addition, the researcher undertook this study because there haven't been any local studies in this field. Most of the researchers focused on examining the effects of parental adolescent communication on academic achievement and social media utilization on academic achievement among university students, except for a few studies carried out at secondary schools with small sample sizes. Furthermore, no studies have been conducted on the simultaneous effects of social media utilization and parent-adolescent communication on academic achievement. Thus, this study is designed to fill the previous research gaps and meet the needs of local research. The researcher believes that more studies are needed to increase awareness of how to use social media and parent-adolescent

communication to improve academic achievement. Without such efforts, social media utilization and communication between parents and adolescents related to academic achievement will continue to be significant challenges for secondary school students in Ethiopia. Therefore, this study aimed to investigate the relationship between social media utilization, parent-adolescent communication, and academic achievement among students at Hodo Public Secondary School. Based on this objective, the researcher formulated the following research questions:

- Is the intensity of social media utilization and parent-adolescent communication predictive of academic achievement among study participants?
- What is the extent of social media utilization and parent-adolescent communication among the study participants?
- Is there a gender difference in terms of social media utilization?

1.3 Operational Definitions

- **Academic Achievement:** In this study, academic performance refers to students' first-semester results in the 2020 academic year. It is measured by each learner's Semester Average Achievement (SAA), calculated on a 100% scale.
- **Parent-adolescent communication:** This term describes the interaction between adolescents and their parents (biological or non-biological) who provide both responsiveness and demands. For the purposes of this research, it is defined operationally as a ratio-level variable, measured by participants' total scores on the Parent–Adolescent Communication Scale during the data collection phase.
- **Social media utilization:** This refers to the engagement with online technological platforms that enable individuals to connect regardless of distance. In the present study, it is operationally framed as a ratio-level variable, assessed through participants' total scores on the Social Media Utilization Scale gathered during the data collection period.

2 Conceptual framework (relationship) between the variables

The researcher briefly discussed the contents of the framework for investigating the impact of social media usage and parent-adolescent communication on the academic achievement of secondary school stu-

dents. In this study, the independent variables (IV) were social media utilization and parent-adolescent communication, which were believed to influence academic achievement (DV). Additionally, Figure 1 below illustrates the connection between the demographic variable (sex) and social media usage.

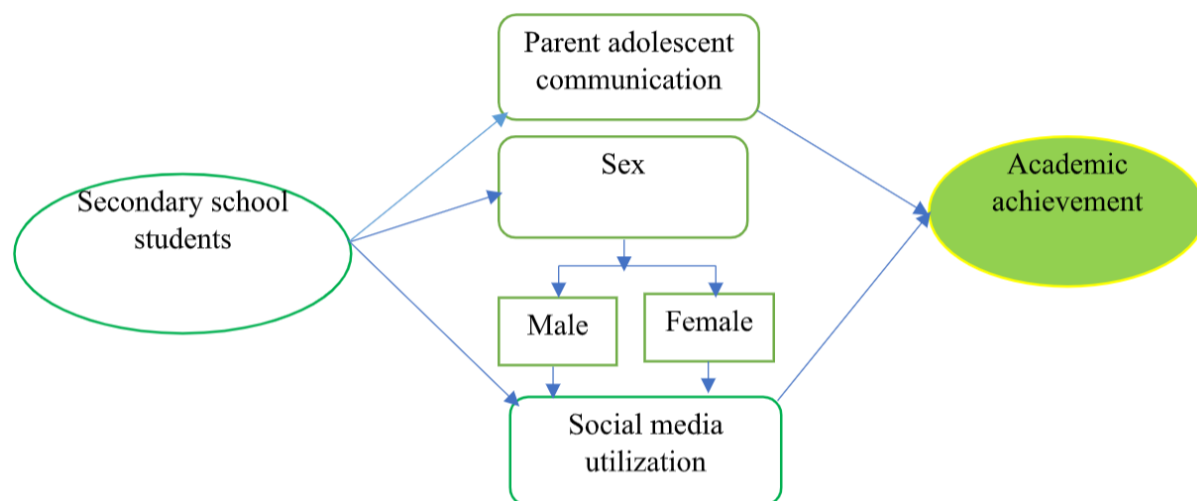


Figure 1: Conceptual Framework on the influence of Social Media Utilization and parent-adolescent communication on Academic Achievement

3 Research Design and Method

3.1 The Study Area

This research was conducted at Hodo Public Secondary School, located in the Kembata-Tembaro Zone of the Southern Nations, Nationalities, and Peoples' Region (SNNPR). Geographically, the school lies about 329 km southwest of Addis Ababa, 187 km west of Hawassa, 56 km west of Durame, and 31 km east of the Omo River (Tembaro Woreda Transport Office). The school was intentionally chosen over other public and private institutions in the zone because many of its students are heavy users of social media. In this setting, learners frequently access social media through mobile phones, making use of free Wi-Fi provided at school and services from local internet cafés. Concerns raised by teachers, principals, and the wider school community regarding this trend served as the main

reason for selecting Hodo Secondary School as the study site.

3.2 Study Design and Period

From April 1 to April 30, 2020, in this study, the researcher applied a cross-sectional research design to collect data at a single point in time to analyze and interpret in connection to qualitative data collected from selected teachers. It allows the researcher to apply surveys, questionnaires, and interviews to gather data from participants as well as explore characteristics, behaviors, or attitudes within a specific time frame.

3.3 Study Participants

There were 3 principals (2 males and 1 female), 37 teachers (26 males and 11 females), and 487 students (309 males and 178 females) who were available during the data collection period.

Table 1: Population frame

Grade	Sections											
	A			B			C			D		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Ninth	44	28	72	48	24	72	40	32	72	36	36	72
Tenth	37	13	50	31	18	49	34	16	50	39	11	50

3.4 Sample and Sampling Techniques

To select participants for this study, a mixed probability sampling technique involving stratified and simple random sampling was used. In stratified sampling, the researcher divided the students into strata based on grade level, gender, and sections. Using simple random sampling, sample students were then selected from each grade level and section in proportion to their representation in the population. The number of sample students from each grade level and section was determined by multiplying 0.52. The table below displays the

proportion of the sample size from each grade and section. Individual students were then selected using simple random sampling, similar to a lottery method. In this case, every student in the population had an equal chance of being selected. In the subsequent process, pieces of paper with "Yes" and "No" written on them were placed in a box, corresponding to the total number of students in each section. Students were then asked to randomly select one piece of paper. The final sample consisted of 253 students from both grade levels. Only those who chose "Yes" were included in the study.

Table 2: Sample Frame

Grade	Sections												Grand Total
	A			B			C			D			
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	
9 th	23	14	38	25	12	37	21	17	38	19	19	38	150
10 th	19	7	26	16	9	25	18	8	26	20	6	26	103

To get information researcher expected to get sub-groups or subsets of the population which is called a sample. In line with this concept out of 487 populations, 253 samples were selected including 15% percent contingency by Yemane, T. (1967) sample size determination formula.

$$n = \frac{NZ^2P(1-P)}{E^2(N-1) + Z^2P(1-P)}$$

Key: n = sample population

N = total population

Z = z - score

P = proportionality

E = alpha significance level

3.5 Data Collection Instrument

This study relied on both primary and secondary sources of information. Primary data were collected directly from participants to capture original and relevant characteristics (Kothari, 2007). The main tool used was a structured questionnaire distributed to 253 students, of which 219 completed usable responses. In addition, in-depth interviews were carried out with nine teachers. Secondary data were gathered through a review of students' Semester Academic Achievement (SAA) reports obtained from the school records office. These combined methods helped examine how social media use and parent-adolescent communication affect academic performance.

3.6 Methods of Data Collection

To gather reliable and well-organized information, the following procedures were used: the Likert scale survey questionnaire and an in-depth interview.

Questionnaire

Social media usage was assessed using a five-point Likert-scale questionnaire adapted from Helou and Ab-Rahim (2014) and Mingle & Adams (2015). Before administration, the instrument was reviewed by an English language specialist, adjusted for clarity, and translated into Amharic to ensure accessibility for respondents. The finalized tool consisted of 15 items, for example: “I use social media to keep in touch with my relatives.”

Parent–adolescent communication was evaluated using another five-point Likert-scale questionnaire adopted from Mehmood and Taswir (2013) and Wanajak (2011). Like the previous tool, it was revised and translated into Amharic with the help of experts. This scale contained 10 items, such as: “I sometimes feel afraid to ask my parents for what I need.”

In-depth Interview

In-depth interviews were used as a qualitative method to capture participants’ perspectives in detail and provide a comprehensive understanding of the research issue. For this purpose, nine teachers (seven men and two women) were chosen randomly. Each interview lasted about 30 minutes, allowing respondents sufficient time to express their views on the topic.

Document Observation

The researcher also reviewed students’ academic records to triangulate data. Semester results were collected from the school’s record office using student roll numbers obtained during questionnaire completion. Any participant who did not provide their roll number was excluded from this part of the analysis. This method enabled comparison of self-reported behaviors with actual academic achievement.

3.7 Data Collection Procedure

The researcher first prepared the close-ended items, adapting and refining them before translating the questionnaires into Amharic with the assistance of language experts to ensure clarity. Ethical clearance was then secured from the Psychology Department of Dilla University, which granted permission to access the required data and documents. Afterward, arrangements were made with school principals to identify suitable times when students could complete the survey without disrupting their classes. Prior to distribution, participants were briefed on the purpose of the study and given clear instructions on how to respond. Questionnaires were completed under the supervision of the researcher and assistants, with sufficient time allotted to allow participants to fully understand and answer the questions.

3.8 Data Analysis

The study applied both quantitative and qualitative approaches to analyze the collected data. Quantitative responses were carefully checked, coded, and entered into SPSS version 20 for processing. Analysis involved both descriptive and inferential methods, such as linear regression, one-sample t-tests, and independent t-tests.

For the qualitative component, data from interviews were first coded, categorized, and organized into themes. Notes and audio recordings were transcribed word-for-word in Amharic by the researcher. During translation, attention was also given to tone, expressions, and body language used by respondents to preserve meaning.

4 Results

4.1 Socio-demographic Characteristics of the Respondents

According to data gathered from 219 participants as shown in Table 1, the majority (67.1%) of students in the study area are found in late adolescents (16 to 18 years) old. This indicates the majority of students in the study area are found in late adolescence.

Table 3: Demographic variables on the effect of social media utilization and parent-adolescent communication on academic achievement of high school students, south Ethiopia (219)

Age	N	%	Sex	N	%	Grade Level	N	%
16-18 (Late adolescence)	147	67.10	Male	67	30.60	Ninth	115	52.50
19-22 (Early adulthood)	51	23.30	Female	152	69.40	Tenth	104	47.50
Above 22 (Middle adulthood)	15	6.80	Total	219	100.00	Total	219	100.00
Below 15 (Early adolescence)	6	2.70						
Total	219	100.00						

n=frequency, %=percentage

Regarding sex, the majority of participants were males which constituted 69.4%, and the remaining 30.6% females. The implication of the above finding the majority of participants were male in the study area.

4.2 Influence of Social Media Utilization and Parent-Adolescent Communication on Academic Achievement

In Table 4, social media utilization has a statistically significant impact to academic achievements, $F(2,216) = .101$, $p = .034$.

Table 4: Model Summary

Model	<i>R</i>	<i>R</i> Square	Adjusted <i>R</i> Square	Std. Error of the Estimate	Change Statistics					Durbin- Watson
					<i>R</i> Square Change	<i>F</i> Change	<i>df</i> 1	<i>df</i> 2	<i>Sig.</i> <i>F</i> -Change	
1	.031 ^a	.001	-.008	14.227	.001	.101	2	216	.304	2.089

a. Predictors: (Constant), Parent-adolescent communication, social media utilization

b. Dependent Variable: Academic achievement

R Square

The Model Summary Table shows how well the regression line accounts for the overall variation in the dependent variable. As presented, the *R* value for the two predictors parent-adolescent communication and social media use was .101, meaning that together they explained 1.01% of the variance in academic achievement. Regarding the Durbin-Watson test, one of the key assumptions of regression is that the observations remain independent. When data are collected over time, successive responses may become correlated. To check this, the Durbin-Watson statistic is expected to range between 1.5 and 2.5. In this study, the obtained value was 2.089, which falls within the acceptable range, indicating that autocorrelation was not present.

4.3 Overall Interpretation/Reporting of the Results of Regression Analysis on Academic Achievement

In summary, a stepwise multiple regression analysis was conducted to examine whether social media use and parent-adolescent communication significantly influence students' academic achievement. The model suggested that the combined predictors accounted for a small, non-significant proportion of variance ($\beta = .001$, $F(2,216) = .101$, $p = .304$).

At the same time, an ANOVA test (see Table 4) was used to further assess the relationship. The results indicated that social media utilization had a statistically significant effect on academic achievement ($\beta = .001$, $F(2,216) = .101$, $p = .034$).

In support of this, one participant of the interview, male and aged 41, from teachers, affirmed that:

"Excessive use of social media can lead individuals to lose focus on what is important to them. Concerns have been raised by many school teachers and the general public due to the lack of regulations or guidelines provided by school officials regarding inappropriate use of technology. As high school students, their primary focus should be on their education, and it is not beneficial for their academic life if they prioritize social media or use it in an unbalanced manner. However, I cannot definitively state that it is detrimental to their academic life when used poorly. It may negatively impact their academic life if they utilize social media in a way that is not aligned with their educational goals, such as spending excessive time on non-academic activities like chatting, sharing, and liking posts, rather than seeking out crucial information for their studies."

However, other participants of the interview, one participant of interview sex: male and aged 34 from teachers: stated that:

It is impossible to determine the impact of using social media on academic life, as there are both benefits and drawbacks. On one hand, it provides access to valuable information for academics, social activities, and entertainment. On the other hand, it can be seen negatively as it often distracts students from studying. Therefore, the impact of social media on academic performance depends on the user's experience and intentions. It is important to acknowledge that social media can both present opportunities and challenges. While it offers access to academic information, unintentionally spending excessive time on it can hurt an adolescent's academic life.

Table 5: One-Sample *t* – test Summary on Social Media Utilization and Parent-Adolescent Communication

Variables	Mean	Standard deviation	N	r	t	df
Social media utilization	1.90	2.63	219	.046	1.498	-.054
Parent-adolescent communication	2.57	3.50	219	.012	1.736	.393

*P** <.05

According to Table 5, one sample *t*-test demonstrated significant difference between the social media utilization and parent adolescent communication among the students. The extent social media utilization and parent adolescent communication among was, 95%CI, social media utilization (*M* = 1.90, *Sd* = 2.63), *t* (219) = 1.498, and parent adolescent communication (*M* = 2.57, *Sd* = 3.50), *t* (219) *p* = .012, which implied that there is a statistically significant difference in extent social media utilization and parent adolescent communication among study participants.

In addition to this, one participant of interview sex: female and aged 30 from teachers: said that:

The use of social media by students at our school, whether for academic purposes or personal enjoyment, is not overemphasized. Students access social media both through the school's Wi-Fi and their mobile data. Additionally, the interviewees noted that parents stay updated on their children's academic progress and maintain communication

with the school. We organize familiar parent days at the beginning and end of the school year, and when necessary, we contact parents to address any current issues that assist us in managing and supporting students at their respective academic levels.

In contradict to this, one participant of interview sex: male and aged 52 from teachers: said that:

Despite the claims of other informants, the entire school community is not effectively utilizing social media for academic information or entertainment due to the absence of a centralized network and inadequate school Wi-Fi. It can be argued that our community lacks social media usage because there are no funds, preventing students from accessing cell data or online connectivity. Furthermore, parent-school communication is deficient. Only a small number of parents attend parent-teacher conferences, and some parents make impersonal phone calls to address their children's issues. Additionally, certain parents choose not to attend these

conferences and evade their responsibilities. Consequently, this highlights the poor interactions or

orientations between parents and adolescents at home.

4.4 Gender Differences in terms of Social Media Utilization

Table 6: Independent sample t – test on social media utilization interns of gender

Social media	Male			Female			95% CI for MD	<i>r</i>	<i>t</i>	<i>Df</i>	
Utilization	Mean	Sd.	<i>N</i>	Mean	Sd.	<i>N</i>					
	65.73	3,292	152	65.97	3.950	67	.267	.483	.049	1.576	212

$P^* < .05$

Thus, the above finding reveals that there was no statistically significant difference between academic achievement among males and females ($M = 65.73$, $SD = 3.292$, $N = 152$; $M = 65.97$, $SD = 3.950$, $N = 67$) at a .05 significant level. This indicates that there were no statistically significant differences between the mean score of academic achievement among male and female participants.

In addition to this, one participant in the interview, a male aged 35, said that:

I don't understand the gender difference in terms of social media usage. It might be determined by an individual's purpose and goals for using social media and their perceptions of its outcomes, but biological sex cannot make a difference in terms of social media usage. Whenever there is an opportunity, there is also a challenge. Having access to information for academic purposes is a major advantage of social media, but unintentionally spending too much time on it is a negative aspect of social media usage and can be seen as an influence on academic life for adolescents.

In contrast to this, one participant in the interview sex, a male aged 52 from teachers, said that:

In my opinion, males tend to use social media more than females because females may often be occupied with helping their mothers in the kitchen and other household tasks. Additionally, males are likely to spend more time outside of their homes, which grants them the freedom to socialize with their peers on social media sites. These factors contribute to gender differences in social media utilization.

5 Discussion

5.1 The Extent of Social Media Utilization and Parent-Adolescent Communication

Findings from this study indicate a statistically significant difference in how participants engage with social media and communicate with their parents. The actual results showed only slight deviations from expected values. In recent years, parents have demonstrated limited awareness of how technology shapes adolescents' relationships. Nonetheless, it is important for parents to understand this influence, as doing so helps them maintain supportive relationships with their children and guide their choices regarding decision-making and media use (Currie, 2014; Toombs, 2014).

5.2 Influence of Social Media Utilization and Parent Adolescents' Communication on Academic Achievements

The results also suggest that both social media engagement and parent–child communication play measurable roles in shaping students' academic outcomes. Oche and Aminu (2016) noted that many learners fall behind academically due to spending excessive time on social platforms. Similarly, Obi, Bulus, Adamu, and Sala'at (2012) observed that heavy reliance on these sites negatively affects grammar and language skills, while Abaleta (2014) reported that overuse can impair students' ability to communicate clearly and hinder learning. Internet dependency has become a worldwide concern, often leading students to prioritize online activities over personal or educational responsibilities, which ultimately damages academic success.

In contrast, Camilia, Sajoh, and Dalhtu (2013) found that social media can benefit learning, with about three-quarters of students in their study reporting that they used these platforms for school-related tasks. Likewise, Kaplan and Haenlein (2016) pointed out that social media can foster personal growth, creativity, and technical skills. Harrath and Alobaidy (2016) further argued that when used purposefully, media consumption may enhance academic outcomes. Beyond social media, effective communication between parents and adolescents has been linked to improved self-esteem, academic achievement, and moral reasoning (Hartos & Power, 2012). On the other hand, Brown and Iyengar (2018) stressed that the absence of parental guidance, acceptance, and autonomy support puts adolescents at a disadvantage, leaving them without essential skills for academic success.

5.3 Gender Differences in terms of Social Media

The study also revealed no significant differences between male and female students in terms of social media engagement. Lenhart (2015) reported a similar trend, noting that both genders generally participate in online activities at comparable rates. Nonetheless, gender as a demographic factor does influence the types of platforms students prefer: while males show more interest in LinkedIn, females are more likely to favor Facebook personal pages (Lenhart *et al.*, 2013). According to social role theory, such differences arise because men and women are socialized into distinct responsibilities and behavioral patterns. Men tend to emphasize independence, intellectual pursuits, and competition, whereas women focus more on interpersonal and communal roles.

Earlier studies, however, have documented contrasting findings. Some research has suggested that females use social media more frequently than males, while others reported that men dominate internet use due to lower privacy concerns. For instance, Cho *et al.* (2019) found that older female users from individualistic cultures expressed stronger privacy concerns compared to men. Similarly, Akyildiz and Argan (2012) observed that male students in Turkey spent more time on Facebook than females. Tufekci (2018) showed that women were several times more likely than men to partici-

pate in online networking sites. Perrin (2015) also noted that American women gradually surpassed men in social media use. In Ethiopia, Mohammed (2014) documented significant gender-based differences in the frequency of online activity. Tham and Ahmed (2016) reached a similar conclusion in their study of secondary school students, emphasizing notable gender variations in social media practices.

Taken together, these findings imply that while social media can both support and hinder academic life, the balance depends largely on how it is managed. Tham and Ahmed (2016) suggested that the responsibility lies mainly with parents, who should help ensure that adolescents use social media constructively without compromising their studies.

6 Conclusion

The findings of this research can be summarized in three key points:

1. Both social media usage and communication between parents and adolescents significantly influence students' academic performance.
2. Notable differences exist in the extent of social media engagement and parent–child communication among the participants.
3. No meaningful gender-based differences were found in social media use.

Overall, the results highlight that social media activity and the quality of parent–adolescent interaction are important determinants of academic achievement among secondary school learners. This underlines the responsibility of stakeholders—including parents, teachers, counselors, school leaders, community members, and government institutions—to develop strategies that address challenges linked to digital device usage. Moreover, parents and guardians are encouraged to foster open, supportive communication to promote students' success.

The Study's Strengths and Limitations

This research stands out as the first of its kind conducted in Ethiopia, making it a valuable contribution to the field. However, certain limitations must be acknowledged. The study focused solely on one school site, which restricted the diversity of participants and locations. Furthermore, the

reliance on self-reported data introduces the possibility of bias. Consequently, the outcomes of this research should not be generalized to all secondary school students in the Kembata Tembaro Zone or across Ethiopia.

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Declarations

I, Markos Malimo Setena, affirm that the study entitled “*The Influence of Social Media Utilization and Parent–Adolescent Communication on Secondary School Students’ Academic Achievement*” was entirely conducted by me.

Ethical Approval and Consent to Participate

Prior to data collection, formal approval was obtained from the Department of Psychology, Institute of Education and Behavioral Science, as well as from the school administration. The objectives of the study were clearly explained to participants,

and written informed consent was secured before participation. Confidentiality of all responses was strictly maintained throughout the process.

Availability of Data

The data for this study was available from the corresponding author on reasonable request.

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