Examining the Influence of Teachers and Social Dynamics in Adolescent Cyberbullying Intervention

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Abstract

The prevalence of cyberbullying presents a significant threat to the well-being and development of adolescents. Despite increased awareness, there remains a critical gap in understanding the growing concern of cyberbullying among adolescents. This research aims to explore the prevalence and influence of teachers and social dynamics in adolescent cyberbullying intervention in the Kingdom of Saudi Arabia (KSA), based on theoretical concepts from the Theory of Planned Behaviour (TPB). The study used a structured, validated questionnaire to collect data from 724 middle and high school students across KSA, employing a simple random sampling technique. Quantitative analysis was conducted using Structural Equation Modelling (SEM). The results indicate that 41.7% of the sample had experienced cyberbullying. The study highlights the decisive role of attitudes and intentions in shaping cyberbullying behaviours, emphasising the need for a negative perception. Empathy emerges as a protective factor, while perceived behavioural control acts as a significant deterrent. Subjective norms had an insignificant impact on intentions. Teacher intervention was negatively linked to students' intentions, suggesting that teachers can discourage negative cyberbullying intentions. Additionally, teachers' intervention plays a significant moderating role between students' intentions and actual behaviour, weakening the relationship between intention and the manifestation of cyberbullying behaviour. The findings suggest policy implications for targeted teacher interventions as effective deterrents and underscore the importance of fostering an empathetic environment to enhance adolescents' social and emotional skills in KSA. These results provide practical insights for policymaking and the professional training of teachers in addressing cyberbullying.

Keywords: Bullying, Disciplinary Sanctions, Clinical Psychology, Saudi Arabia, Middle School Intervention, Structural Equation Modelling.

1. Introduction

The prevalent form of nonconformist behaviour observed in adolescence is commonly manifested as school bullying. However, with the advancement of information and communication technologies (ICTs), bullying has evolved from physical aggression to a virtual form (**Catone *et al.***, 2020). Despite the numerous benefits ICTs have brought to human life, their excessive use has given rise to various challenges (**Hoareau *et al.***, 2023). Cyberbullying, in particular, has emerged as a significant issue resulting from the overuse of ICTs. Cyberbullying generally refers to the display of hostility and aggression by individuals through digital or electronic mediums, with the intent of sending messages that cause harm or discomfort to another person (**Giumetti; Kowalski**, 2022). This behaviour may encompass a range of activities, including the transmission of insulting or threatening messages via mobile phones or emails, the uploading of embarrassing images online, or the sharing of private photographs without consent. It also includes the spreading of rumours aimed at damaging an individual's reputation, hacking into someone's account, and sending harmful messages that lead to personal trouble, as well as capturing and sharing videos and images solely for the amusement or mental distress of the victim (**López-Vizcaíno *et al.***, 2021).

Cyberbullying has emerged as a widespread social issue in contemporary society, with social media platforms, particularly Facebook, serving as prominent channels for such behaviour. Research on cyberbullying has been steadily increasing,

highlighting its prevalence. A study found that approximately 20% of students aged 13-18 engage in cyberbullying, while 50% become victims (**Ademiluyi *et al.***, 2022). Similarly, among adolescents, 17% have encountered cyberbullying, 10.5% have perpetrated it, and 35.2% have experienced both roles, as both bully and victim (**Craig *et al.***, 2020). According to Cyber Security Malaysia (**Ariffin *et al.***, 2021), around 27% of students report being cyberbullied, with 13% continuing to face online bullying. In this study, the term "Social Dynamics" is operationalised to refer to the interpersonal influences, shared norms, and collective perceptions that shape individuals' behaviours within their social environment. This concept is explored through the lens of Subjective Norms related to cyberbullying, encompassing students' perceptions of societal expectations, pressures, and shared responsibilities regarding the prevention of cyberbullying.

It is crucial to highlight that the consequences of cyberbullying extend beyond the online realm, manifesting in tangible challenges such as academic difficulties, lowered self-esteem, emotional distress, and psychological issues. Among school-age victims of cyberbullying, a significant correlation has been observed with reduced academic performance (**Giumetti; Kowalski**, 2022; **Doumas; Midgett**, 2021; **Huang *et al.***, 2021; **Lee *et al.***, 2023; **Schodt *et al.***, 2021). Given the diverse manifestations of cyberbullying, its identification and mitigation present significant challenges. However, it is essential to recognise the risk factors associated with cyberbullying and implement preventive measures to reduce its prevalence (**Tozzo *et al.***, 2022). Educational institutions involved in cyberbullying incidents may face legal repercussions for infringing upon students' freedom of expression rights, particularly when such incidents occur outside school premises (**Chan *et al.***, 2020). Previous research on cyberbullying perpetration has largely focused on classifying cyberbullies according to their sociodemographic characteristics (**Wachs *et al.***, 2020; **Talwar**, 2022; **Rakic *et al.***, 2021), personality traits (**Pascual-Sanchez *et al.***, 2021; **Favini *et al.***, 2023), and their involvement in both cyber and traditional bullying (**Ng *et al.***, 2022; **Cañas *et al.***, 2020; **Li *et al.***, 2022). However, contemporary studies are increasingly focusing on the immediate factors influencing cyberbullying, particularly the behaviour of the perpetrator. In light of the rapid rise in internet usage and cyberbullying incidents, it is crucial to identify and understand the key factors contributing to adolescents' heightened propensity to engage in cyberbullying. Consequently, relevant authorities should implement effective measures to address this issue (**Yang *et al.***, 2021).

Despite its severe and detrimental consequences, many individuals continue to overlook the gravity of cyberbullying and its impact on victims. A significant number of people fail to recognise the seriousness of the issue, primarily because it does not involve physical contact. They perceive harassment-related posts as mere 'words' that have no real effect on the victim's life (**Pascual-Sanchez *et al.***, 2021). It has been observed that many cyberbullies view their actions as harmless teasing and often shift the blame onto the victims, suggesting that their distress is merely a result of excessive sensitivity (**Steer *et al.***, 2020). The primary rationale for downplaying online bullying is its non-physical nature. However, although cyberbullying typically occurs outside the school environment, its repercussions extend to various aspects of adolescents' lives, affecting their behaviour and academic performance (**Aparisi *et al.***, 2021). Therefore, schools should not regard it merely as an external issue but must actively address it to mitigate both cyberbullying and its associated consequences (**Redmond *et al.***, 2020).

In many Western schools, psychologists and counsellors are employed to provide counselling, guidance, and intervention in cases of cyberbullying (**Elbedour *et al.***, 2020). However, this practice is not universally adopted worldwide. Some schools lack full-time counsellors, and others do not have any counsellors at all (**Stagnaro**, 2020). Consequently, the absence of professional counselling resources places the primary responsibility on teachers to support students who experience cyberbullying, whether as victims or perpetrators. Furthermore, it is the responsibility of school and college administrations to provide training for teachers on this specific issue. There is a pressing need to enhance the awareness and preparedness of teachers, enabling them to assist victims effectively (**Ware**, 2021; **Rajbhandari; Rana**, 2023; **Gazdek**, 2021; **Pyżalski *et al.***, 2022). Teachers' interventions have proven successful in improving student outcomes in the context of traditional bullying (**Burger *et al.***, 2022), and have also been shown to be effective in addressing cyberbullying (**Charlton *et al.***, 2021). Therefore, this study aims to assess teachers' attitudes and perceptions regarding cyberbullying, their ability to accurately identify it, and the skills necessary for effective intervention. Additionally, it investigates the impact of teachers and social dynamics on interventions targeting cyberbullying among adolescents in middle and high schools in the Kingdom of Saudi Arabia.

2. Literature Review

2.1. Attitude towards Cyberbullying to Behavioural Intention of Students' Cyberbullying

Shaikh *et al.* (2021) assert that those possessing a favourable disposition towards cyberbullying are more prone to participate in such conduct, whilst those with an unfavourable disposition are less likely to engage in it. **Buelga *et al.*** (2020) revealed analogous findings, indicating that teenagers with a favourable disposition towards cyberbullying are more inclined to engage in such behaviours. Moreover, **Mihelič *et al.*** (2023) and **Black *et al.*** (2022) contended that persons who harbour a favourable disposition towards cyberbullying frequently demonstrate moral disengagement, which they employ to justify their actions. **Dynel** (2021) observes that numerous cyberbullies rationalise their behaviour by asserting that their bullying is meant to be comedic.

The inclination to engage in cyberbullying refers to the motivation behind such behaviour (Shaikh, Rehman, & Amin, 2020). This aim is contingent upon the individual's perspective regarding cyberbullying (**Luo *et al.***, 2023; **Tanrikulu; Erdur-Baker**, 2021; **Vlaanderen *et al.***, 2020). **Wei *et al.*** (2022) discovered that persons possessing favourable attitudes about cyberbullying are more inclined to participate in such conduct. **Almomani *et al.*** (2020) emphasised that behavioural intention is the primary determinant of cyberbullying, shaped by moral disengagement, self-image, perceived behavioural control (PBC), peer interactions, and attitudes. Inadequate social information processing and elevated moral disengagement frequently result in aggressive behaviour (**Huang *et al.***, 2023). **Huang *et al.*** (2020) confirmed that attitude greatly influences the probability of participating in cyberbullying. In light of the above discourse, the subsequent hypothesis is proposed,

H1: A more favourable attitude towards cyberbullying is positively associated with the behavioural intention to engage in cyberbullying among students.

Therefore, the null hypothesis posits that there is no positive relationship between students' attitudes towards cyberbullying and their intention to engage in it. This implies that,

H0: A more favourable attitude towards cyberbullying is not associated with the behavioural intention to engage in cyberbullying among students.

2.2. Subjective Norms Related to Cyberbullying to Behavioural Intention of Students' Cyberbullying

Numerous research have investigated the relationship between subjective norms and cyberbullying. **Madon and Chin** (2021) and **Leung** (2021) discovered that individuals are more inclined to engage in cyberbullying when they perceive peer participation, but are less inclined when peers dissuade such activity. This highlights the impact of social influence on individual attitudes. **Shaikh *et al.*** (2023) investigated the social influence mechanisms that connect subjective norms regarding cyberbullying with an individual's likelihood of perpetrating it. **Piccoli *et al.*** (2020) found that stronger perceived peer-norm support for cyberbullying behaviours leads to higher levels of cyberbullying perpetration, especially among those with greater identification with their peer group. This relationship intensifies with higher ingroup prototypicality. **Byers and Cerulli** (2021) also showed that individuals are more likely to engage in cyberbullying when they expect peer approval rather than criticism. Furthermore, **Vlaanderen *et al.*** (2020) supported these findings, demonstrating that individuals are more likely to participate in cyberbullying when they perceive peer group support. These findings highlight the significant role subjective norms play in adolescents' inclination to engage in cyberbullying. Based on the above discussion, the following hypothesis is suggested,

H2: Students' acknowledgment and adherence to perceived subjective norms are associated to a decrease in intentions related to cyberbullying.

Therefore, the alternative hypothesis suggests that there is a relationship between students' recognition and adherence to subjective norms and a decrease in their intentions related to cyberbullying.

H0: Students' acknowledgment and adherence to perceived subjective norms are not associated with a decrease in intentions related to cyberbullying.

2.3. Perceived Behavioural Control to Behavioural Intention of Students' Cyberbullying

Shaikh *et al.* (2020) define perceived behavioural control as cyberbullying's ease or difficulty. **Wang and Ngai** (2020) found that teenagers who had never bullied may become cyberbullies due to anonymity. Invisibility removes the victim's dread of retribution. According to **Corkum and Shead** (2023), being physically absent in online interactions reduces self-awareness and promotes online aggression and impulsivity. Cyberbullies are spared from visual input from cyber-victims, allowing them to avoid seeing their misery, according to **Wood** (2022). This absence of direct confrontation encourages such behaviours. The constant availability of digital and social media facilitates cyberbullying, unlike conventional bullying, as noted by **Cuesta Medina *et al.*** (2020) and **Auriemma *et al.*** (2020). Bullies can easily target their victims since they have no geographical or time limits (**Bork-Hüffer *et al.***, 2021). People who think cyberbullying is easy are more likely to do it (**Krishnan**, 2022). According to **Luo *et al.*** (2023), individuals opt to engage in cyberbullying. **Heirman and Walrave** (2012) posited that the intention to participate in cyberbullying is a significant predictor of teenagers' self-reported engagement in this behaviour. Consequently, in light of the preceding discourse, the subsequent hypothesis is proposed,

H3: Greater perceived behavioural control over engaging in cyberbullying is positively associated with the behavioural intention to engage in cyberbullying among students.

Therefore, the alternative hypothesis suggests that there is no positive relationship between students' perceived behavioural control over cyberbullying and their intention to engage in it. This implies that,

H0: Greater perceived behavioural control over engaging in cyberbullying is not positively associated with the behavioural intention to engage in cyberbullying among students.

2.4. Empathy towards Victims of Cyberbullying to Behavioural Intention of Students' Cyberbullying

Empathy, despite minor variations in definition, is typically assessed by considering the emotions and experiences of the subject in relation to others (**Cuff *et al.***, 2016). **Jiang *et al.*** (2021) define empathy as the ability to understand, recognise, and share the emotions of others. Research on adolescent cyberbullying focuses primarily on the developmental aspect of empathy (**Ang; Goh**, 2010). **Liu *et al.*** (2023) highlight empathy's vital role in reducing cyberbullying, while **Jiang *et al.*** (2021) and **Falla *et al.*** (2021) suggest that both affective and cognitive empathy components contribute to lowering aggressive and violent behaviours. Individuals involved in cyberbullying often exhibit lower empathy towards victims. Moreover, various psychologists, educators, and neuroscientists argue that empathy helps diminish antisocial behaviour (**Guthridge *et al.***, 2020; **Viding *et al.***, 2024). **Donat *et al.*** (2023) found that empathetic individuals are less likely to engage in cyberbullying. Thus, empathy is recognised as a key factor in reducing cyberbullying (**Albert**, 2021). Additionally, empathy may mitigate bystander behaviour that enables cyberbullying. Building on these findings, the following hypothesis is proposed,

H4: Higher levels of empathy towards victims of cyberbullying are negatively associated with the behavioural intention to engage in cyberbullying among students.
H5: Higher levels of empathy are negatively associated with the actual engagement in cyberbullying among students.

In both cases, the alternative hypotheses suggest that there is no negative relationship between empathy and either the intention to engage in cyberbullying (H4) or the actual engagement in cyberbullying (H5). Therefore, this implies that,

H0: Higher levels of empathy towards victims of cyberbullying are not negatively associated with the behavioural intention to engage in cyberbullying among students.
H0: Higher levels of empathy are not negatively associated with the actual engagement in cyberbullying among students.

2.5. Behavioural Intention of Students' Cyberbullying to Actual Action of Students' Cyberbullying

Cyberbullying is recognised as a major issue within the 'online generation,' particularly among adolescents and children (**Pyżalski *et al.***, 2022). The growth of ICTs in less developed nations is expected to increase the number of individuals affected by cyberbullying (**Henares-Montiel *et al.***, 2022). Understanding 'behavioural intention' is crucial in examining cyberbullying, with theories like the Technology Acceptance Model (TAM) and TPB exploring this aspect (**Barlett *et al.***, 2021). Researchers such as **Jain and Agrawal** (2021), **Ryoo *et al.*** (2024), and **Grover and Raju** (2023) investigate cognitive processes that drive students' intentions to engage in cyberbullying, considering factors like subjective norms, perceived behavioural control, and attitudes. **Piccoli *et al.*** (2020) identify several factors, such as institutional culture, online anonymity, and peer relationships, that influence the transformation of behavioural intention into actual cyberbullying acts. A substantial body of literature suggests that students inclined toward cyberbullying are more likely to act on their intentions (**Vlaanderen *et al.***, 2020). Within this framework, the TPB posits that behavioural intention is the key predictor of actual behaviour (**Ajzen**, 2020), with research in the cyberbullying context confirming a positive correlation between students' intentions and subsequent actions (**Schultze-Krumbholz *et al.***, 2020). Hence, the following hypothesis is proposed,

H6: The behavioural intention to engage in cyberbullying is positively associated with the actual engagement in cyberbullying among students.

The alternative hypothesis suggests that there is no positive relationship between students' intention to engage in cyberbullying and their actual engagement in it. This implies that,

H0: The behavioural intention to engage in cyberbullying is not positively associated with the actual engagement in cyberbullying among students.

2.6. Moderating Role of Teachers' Intervention between Behavioural Intention of Students' Cyberbullying and Actual Action of Students' Cyberbullying

Nearly every aspect of social life, particularly the educational sector, has been impacted by COVID-19 (**Ahmed *et al.***, 2021). The transition to virtual learning, as highlighted by **Torres Martín *et al.*** (2021), presents numerous challenges for teachers. **Seufert *et al.*** (2022) suggest that educators must be able to detect changes in student behaviour while ensuring their safety in virtual classrooms. **Benrazavi** (2021) found that the teacher-student connection plays a positive and protective role in reducing both traditional and cyberbullying. **Nagar and Talwar** (2023) emphasised that the teacher-student interaction significantly influences cyberbullying-related behaviours. According to **Sethi and Scales** (2020), students with positive teacher interactions tend to form stronger peer relationships. **Wang *et al.*** (2022) observed that a good relationship with a teacher leads to pro-social behaviour and decreased aggression. **Sayed *et al.*** (2023) noted the importance of addressing cyberbullying, with the educational sector playing a pivotal role, particularly in the context of e-learning. **Santre** (2023) argued that when students feel connected in virtual classrooms and have

positive learning experiences, they are less likely to be victims of cyberbullying and show reduced aggression. **Karagianni and Karabatzaki** (2022) supported these findings, confirming that supportive teachers are crucial in mitigating cyberbullying. **Uddin and Rahman** (2022) demonstrated that a higher quality of teacher-student relationships reduces the likelihood of cyber victimisation and aggression. Based on this discussion, the following hypothesis is proposed,

H7: Teachers' intervention is negatively associated with the behavioural intention to engage in cyberbullying among students.
H8: Teachers' intervention is negatively associated with the actual engagement of students in cyberbullying.
H9: Teachers' intervention moderates the relationship between students' behavioural intention and their actual engagement in cyberbullying, such that the relationship is weaker when teachers are actively involved in intervention programs.

The alternative hypotheses suggest that there is no negative association between teachers' intervention and either the intention or actual engagement in cyberbullying and that teachers' intervention does not moderate the relationship between intention and actual behaviour. This suggests that:

H07: Teachers' intervention is not negatively associated with the behavioural intention to engage in cyberbullying among students.
H08: Teachers' intervention is not negatively associated with the actual engagement of students in cyberbullying.
H09: Teachers' intervention does not moderate the relationship between students' behavioural intention and their actual engagement in cyberbullying, such that the relationship is not weaker when teachers are actively involved in intervention programs.

3. Theoretical Foundation and Conceptual Framework

This study is theoretically grounded in the Theory of Planned Behaviour (TPB) proposed by **Ajzen** (1985; 1991). The Theory of Planned Behaviour (TPB) asserts that human conduct is affected by three principal factors: Attitude towards Cyberbullying (AT), Subjective Norms (SN), and Perceived Behavioural Control (PBC), which collectively influence Behavioural Intention towards Cyberbullying (BIS). According to **Ajzen** (1985; 1991), individuals' intentions to engage in behaviour are determined by these factors. In the context of cyberbullying, this framework helps to understand the psychological factors influencing adolescents' likelihood to engage in or avoid cyberbullying. The conceptual framework of this study extends TPB by incorporating additional factors crucial to understanding adolescent cyberbullying, namely AAS, EMP, and TIN. These factors, derived from the studies of **Raskauskas and Stoltz** (2007) and **Baldry *et al.*** (2015), suggest that not only psychological factors but also empathic responses and teacher intervention play significant roles in shaping adolescents' actual cyberbullying behaviour.

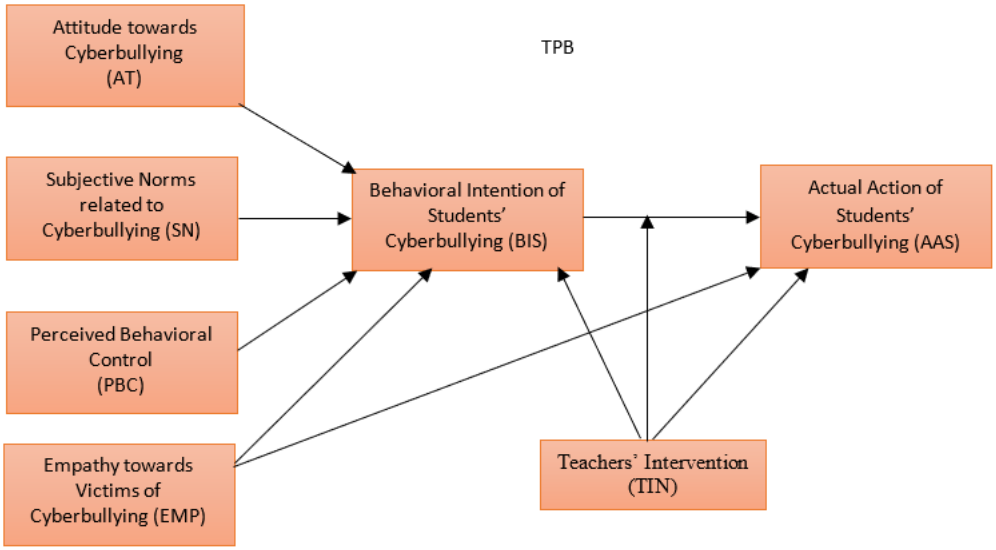

Figure 1: Conceptual Framework.

4. Methodology

4.1. Research Design

This study adopts a positivist approach, prioritising scientific methods to examine the influence of teachers and social interactions on interventions targeting cyberbullying among adolescents (**Creswell**, 2014). A quantitative methodology is employed to analyse survey data, utilising both descriptive and inferential statistics. Structural equation modelling,

encompassing both measurement and structural models, is used for hypothesis testing, enabling conclusions that can be generalised to a broader population of middle and high school students in KSA (**Cheung *et al.***, 2023; **Hoyle**, 1995).

4.2. Population and Sampling

The study population comprises pupils enrolled in middle and high schools in the Kingdom of Saudi Arabia. Simple random sampling is utilised as the sample method. The sample size is established via the **Krejcie and Morgan** (1970) table, with a 95% confidence level and a maximum margin of error of ±5. The suggested sample size is 383 students based on this methodology. To augment the validity of the findings and mitigate biases, data were gathered from a larger sample of 724 students, so assuring that the conclusions may be effectively generalised to the wider student population in KSA.

4.3. Research Instruments

The study surveyed students in both high school and secondary school using a questionnaire as the primary data collection tool. The questionnaire assessed multiple constructs, including AT, SN, PBC, BIS, AAS, EMP, and TIN. A Likert scale ranging from 1 to 5 was used, with six items for each construct (Table 1). The EMP construct was derived from **Baldry *et al.*** (2015), and the TIN construct was adapted from **Raskauskas and Stoltz** (2007). Constructs aligned with the TPB were adapted from Ajzen's seminal works (**Ajzen**, 1991; 1985). The validity and reliability of these instruments in predicting behaviours are confirmed by studies from **Armitage and Conner** (2001), **Taylor and Todd** (1995), and **Godin and Kok** (1996).

Table 1: Multiple constructs with codes and sources.

Code	Items	Source
AT	**Attitude towards Cyberbullying**	
AT1	Cyberbullying is a significant concern in our school environment.	**Ajzen** (1991), **Ajzen** (1985)
AT2	Teachers play a vital role in shaping how students perceive cyberbullying.	
AT3	Understanding the negative consequences of cyberbullying is crucial for students.	
AT4	Classroom discussions about the impact of cyberbullying are beneficial.	
AT5	I believe students should receive education on ethical technology use.	
AT6	Teachers have a significant impact on shaping students' attitudes toward cyberbullying.	
SN	**Subjective Norms Related to Cyberbullying**	
SN1	Many students in our school are concerned about cyberbullying.	**Ajzen** (1991), **Ajzen** (1985)
SN2	Parents actively participate in preventing cyberbullying.	
SN3	The school administration supports efforts to prevent cyberbullying.	
SN4	Students collectively share a responsibility to address cyberbullying.	
SN5	We frequently discuss strategies for creating a cyberbullying-free environment.	
SN6	Parents play a significant role in influencing students' behaviour.	
PBC	**Perceived Behavioural Control**	
PBC1	I feel confident in recognizing signs of cyberbullying.	**Ajzen** (1991), **Ajzen** (1985)
PBC2	The school provides resources to address cyberbullying.	
PBC3	Students possess the necessary skills to intervene effectively.	
PBC4	I feel empowered to initiate conversations about cyberbullying.	
PBC5	School policies support students in addressing cyberbullying.	
PBC6	Students should receive additional training on handling cyberbullying situations.	
EMP	**Empathy towards Victims of Cyberbullying**	
EMP1	Students should actively promote empathy to prevent cyberbullying.	**Baldry *et al.*** (2015)
EMP2	Those displaying empathy are less likely to engage in cyberbullying.	
EMP3	Students should encourage peers to understand the emotional impact.	
EMP4	Promoting empathy is crucial for fostering a positive school culture.	
EMP5	Fostering empathy can contribute to reducing cyberbullying incidents.	
EMP6	Students should incorporate empathy-building activities into the curriculum.	
TIN	**Teachers' Intervention**	
TIN1	Teachers act on cyberbullying signs.	**Raskauskas and Stoltz** (2007)
TIN2	Teachers act promptly on student discussions.	
TIN3	Teachers intervene when students plan cyberbullying.	
TIN4	Teachers actively prevent cyberbullying in class.	
TIN5	Teachers involved in disciplining cyberbullies.	
TIN6	Teachers shape a cyberbullying-free school.	
BIS	**Behavioural Intention of Students' Cyberbullying**	
BIS1	Some students in my class may intend to engage in cyberbullying.	**Ajzen** (1991), **Ajzen** (1985)
BIS2	Students show signs of considering cyberbullying acceptable.	
BIS3	I'm aware of students discussing cyberbullying or related activities.	
BIS4	Students' express opinions suggesting they may engage in cyberbullying.	
BIS5	I observe students willing to participate in cyberbullying behaviours.	
BIS6	Addressing the intention to cyberbully is critical for prevention.	
AAS	**Actual Action of Students' Cyberbullying**	
AAS1	I've witnessed students engaging in cyberbullying.	**Ajzen** (1991), **Ajzen** (1985)
AAS2	I'm aware of specific cyberbullying incidents involving students.	
AAS3	Students have faced disciplinary actions due to cyberbullying.	
AAS4	Some students in my class are actively involved in cyberbullying.	
AAS5	I've received reports about cyberbullying incidents.	
AAS6	The school has implemented measures to address and prevent cyberbullying.	

4.4. Reliability and Validity

The reliability and validity analyses are essential to assess measurement consistency and ensure an accurate representation of theoretical constructs (**Hair Jr *et al.***, 2021). Both analyses enhance the model's credibility and prevent inaccuracies in explaining underlying phenomena (**Cheung *et al.***, 2023). Table 4 presents the results of the measurement model for our conceptual framework, including outer loadings, VIF values, Cronbach's alpha, CR (rho_a and rho_c), and AVE. The measurement model is illustrated in Figure 2, with the outer loadings of items. To improve the reliability and validity of our constructs, we meticulously refined the measurement model. Items with outer loadings below 0.60 were excluded, in line with empirical research that advocates for strong indicator loadings (**Hair Jr *et al.***, 2021). Most retained items exceeded the more stringent threshold of 0.70, aligning with best practices in construct measurement (**Fornell; Larcker**, 1981). Additionally, items with VIF values above 5 were removed to address potential multicollinearity issues (**Kock; Lynn**, 2012). As a result, seven items (AT3, SN5, SN6, PBC4, EMP5, BIS1, and AAS6) were eliminated from the survey. The AAS construct showed acceptable internal consistency, with Cronbach's alpha of 0.777, reliability measured at 0.780 by rho_a and 0.849 by rho_c, and convergent validity indicated by an AVE value of 0.530. Similarly, the remaining constructs—AT, BIS, EMP, PBC, SN, and TIN—also demonstrated internal consistency, with appropriate reliability and convergent validity measures, confirming that the scales measured their intended constructs. These findings affirm the robustness and credibility of the measurement model.

4.5. Data Analysis

Data analysis begins with the presentation of demographic information for the sampled students. The responses for the constructs Attitude towards Cyberbullying (AT), SN, PBC, BIS, AAS, EMP, and TIN are reported. Various statistical methods were employed to ensure the reliability and validity of the findings. The study then utilized PLS-SEM to assess the relationships between the constructs. The appropriateness of PLS-SEM for testing the underlying hypotheses and its relevance to the research problem made it the chosen methodology. In this approach, the latent constructs are represented by observable variables. SmartPLS software, specifically designed for PLS path analysis, was used to conduct the analysis. This software is widely endorsed by researchers (**Henseler *et al.***, 2016; **Hair Jr *et al.***, 2021; **Cheung *et al.***, 2023) and ensures that the study's exploration of the experiences of students in KSA is conducted in a rigorous and methodologically sound manner.

5. Results and Interpretation

5.1. Background and Demographic Information

Table 2 provides essential background information, while Table 3 outlines the distribution of participants based on gender, prior cyberbullying experience, and access to prevention programs. Among the 403 female participants, 116 reported having experienced cyberbullying, and only 18 had access to prevention programs. Similarly, out of the 321 male participants, 97 had experienced cyberbullying, with 20 having access to prevention programs. In total, 724 students were surveyed, with 213 reporting cyberbullying experiences, 511 not reporting such experiences, 38 having access to prevention programs, and 686 lacking access to these programs.

Table 2: Demographic and Background Information.

Items	Background Information	Frequency	Percentage
Gender	Female	403	55.66
	Male	321	44.34
Grade	Secondary School	329	45.44
	High School	395	54.56
Ethnicity/Race	Non- Saudi	116	16.02
	Saudi	608	83.98
Previous Cyberbullying Experience	No	213	29.42
	Yes	511	70.58
Access to Cyberbullying Prevention Programs	No	686	94.75
	Yes	38	5.25
Source: Authors' Calculations			

Table 3: Gender Wise Cyberbullying Experience and Access to Prevention Programs.

Gender	Previous Cyberbullying Experience		Access to Cyberbullying Prevention Programs	
	Yes	No	No	Yes
Female	116	287	385	18
Male	97	224	301	20
Total	213	511	686	38
Source: Authors' Calculations				

Table 4 illustrates the HTMT (Heterotrait-Monotrait) ratios among different constructs. HTMT values below 0.85 are generally considered acceptable for demonstrating discriminant validity (**Henseler *et al.***, 2016). The HTMT values for

the majority of construct pairs are below the threshold, indicating that discriminant validity is preserved. Furthermore, Table 6 evaluates discriminant validity through the Fornell-Larcker criterion, with the diagonal elements indicating the square root of the Average Variance Extracted (AVE) for each construct (**Henseler *et al.***, 2016; **Fornell; Larcker**, 1981). The off-diagonal elements signify the correlations among constructs. The diagonal values surpass the off-diagonal ones, indicating that each construct possesses greater variance with itself than with other constructs, hence affirming discriminant validity.

Table 4: Discriminant Validity - Heterotrait-monotrait ratio (HTMT) – Matrix.

	AAS	AT	BIS	EMP	PBC	SN	TIN
AAS							
AT	0.531						
BIS	0.636	0.678					
EMP	0.398	0.460	0.559				
PBC	0.587	0.740	0.826	0.601			
SN	0.494	0.686	0.612	0.582	0.808		
TIN	0.432	0.665	0.699	0.757	0.794	0.734	
TIN x BIS	0.291	0.278	0.290	0.065	0.289	0.181	0.243
Source: Authors' Estimations							

Table 5: Discriminant Validity - Fornell-Larcker Criterion.

	AAS	AT	BIS	EMP	PBC	SN	TIN
AAS	0.728						
AT	-0.430	0.774					
BIS	0.512	-0.582	0.773				
EMP	-0.340	0.409	-0.500	0.869			
PBC	-0.477	0.622	-0.695	0.529	0.778		
SN	0.390	-0.565	0.511	-0.499	-0.661	0.791	
TIN	-0.360	0.572	-0.610	0.679	0.683	-0.610	0.785
Source: Authors' Estimations							

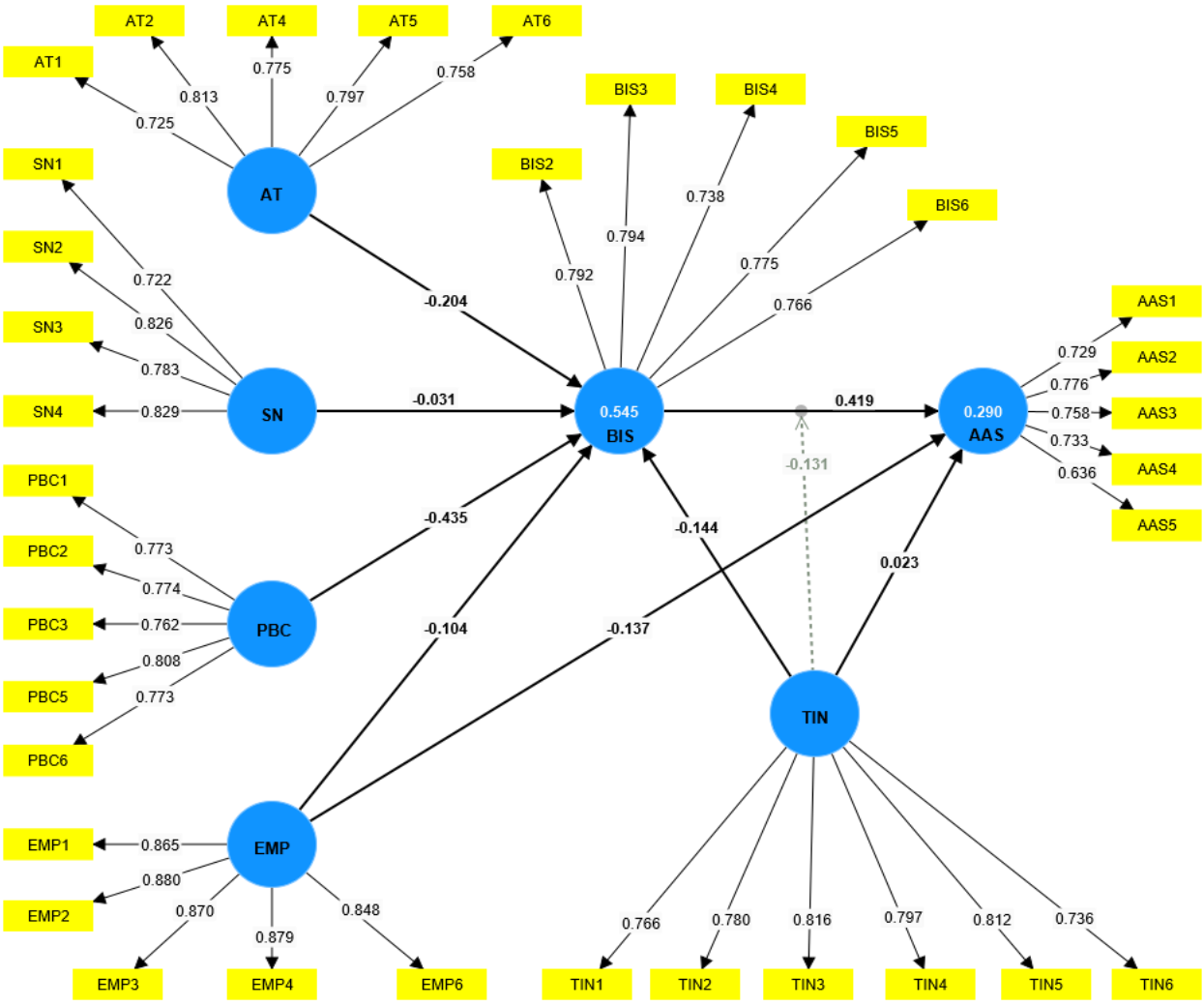

Figure 2: Measurement Model.

5.3. Measurement Model

Table 6 presents the VIF values for the inner model, demonstrating that there are no significant multicollinearity issues, as all VIF values are below the acceptable threshold of 5. In Table 8, model fit indicators such as SRMR (0.063), d_ULS (2.474), and d_G (0.737) suggest a reasonable fit for the model. Although the NFI (0.791) is slightly below the desired threshold, it is still considered acceptable based on established standards (**Hair Jr *et al.***, 2021; **Kline**, 2023). These indicators collectively confirm the model's adequacy in fitting the data, ensuring the validity of the results.

Table 6: Collinearity Statistics (VIF) – Inner Model.

Direction	VIF	Model Fit		
AT → BIS	1.823			
BIS → AAS	1.681			
EMP → AAS	1.948	Criteria	Saturated Model	Estimated Model
EMP → BIS	1.906	SRMR	0.060	0.063
PBC → BIS	2.502	d_ULS	2.267	2.474
SN → BIS	2.047	d_G	0.729	0.737
TIN → AAS	2.334	NFI	0.792	0.791
TIN → BIS	2.751			
TIN x BIS → AAS	1.115			
Source: Authors' Estimations				

Table 7: Path Coefficients.

Direction	Original Sample (O)	Sample Mean (M)	Standard Deviation	T Statistics	P Values	Hypothesis
AT → BIS	-0.203	-0.204	0.038	5.321	0.000	Accepted
SN → BIS	-0.037	-0.037	0.040	0.926	0.355	Rejected
PBC → BIS	-0.440	-0.439	0.048	9.075	0.000	Accepted
EMP → BIS	-0.101	-0.101	0.039	2.616	0.009	Accepted
EMP → AAS	-0.138	-0.138	0.051	2.680	0.007	Accepted
BIS → AAS	0.423	0.424	0.053	7.985	0.000	Accepted
TIN → BIS	-0.144	-0.146	0.042	3.454	0.001	Accepted
TIN → AAS	0.027	0.026	0.053	0.511	0.609	Rejected
TIN x BIS → AAS	-0.129	-0.127	0.035	3.648	0.000	Accepted
Source: Authors' Estimations						

5.4. Structural Model and Path Coefficients

Table 7 displays the path coefficients, whereas Figure 3 depicts these coefficients within the structural model, together with the R^2 values for the dependent variables. The results indicate a substantial negative correlation between AT and the Behavioural Intention to participate in BIS, evidenced by a path coefficient of -0.203. This indicates that when favourable perceptions of cyberbullying rise, the propensity to partake in such conduct diminishes, aligning with other research (**Shaikh *et al.***, 2021; **Buelga *et al.***, 2020). Thus, Hypothesis 1 is validated, underscoring the key influence of attitude on students' intentions concerning cyberbullying. The path coefficient for SN and BIS is statistically negligible (-0.037), signifying an absence of a significant association between these variables. This conclusion results in the dismissal of Hypothesis 2, indicating that subjective norms may not be a robust predictor of cyberbullying intents in this setting.

The results of the study reveal several significant relationships between the constructs, as illustrated by the path coefficients. A substantial negative path coefficient of -0.440 indicates a strong inverse relationship between PBC and BIS which supports Hypothesis 3. This suggests that higher levels of perceived behavioural control serve as a protective factor, reducing the likelihood of students engaging in cyberbullying, aligning with the Theory of Planned Behaviour (**Ajzen**, 1985). Additionally, the negative path coefficients of -0.138 and -0.101 for EMP show that increased empathy is associated with a reduced likelihood of both engaging in Aggression and AAS and forming BIS. Hypotheses 4 and 5 are thus supported, emphasizing empathy as a crucial protective factor against cyberbullying perpetration. A positive path coefficient of 0.423 reveals a significant direct association between BIS and AAS, confirming Hypothesis 6. This suggests that students' intentions to engage in cyberbullying are strongly linked to actual cyberbullying behaviours. Conversely, the negative path coefficient of -0.144 for TIN shows that higher levels of TIN are associated with a reduction in BIS, supporting the acceptance of Hypothesis 7. This emphasizes the potential effectiveness of teacher interventions in disrupting the progression from intentions to actual cyberbullying behaviours. The positive yet statistically insignificant path coefficient of 0.027 for the relationship between TIN and AAS suggests that teacher intervention does not have a direct impact on reducing aggression or antisocial behaviour among students, leading to the rejection of Hypothesis 8. Finally, the path coefficient of -0.129 indicates that TIN moderates the relationship between BIS and AAS, supporting Hypothesis 9. This suggests that the influence of students' intentions on their actual cyberbullying behaviours is diminished when teachers actively intervene, highlighting the importance of teacher involvement in mitigating cyberbullying.

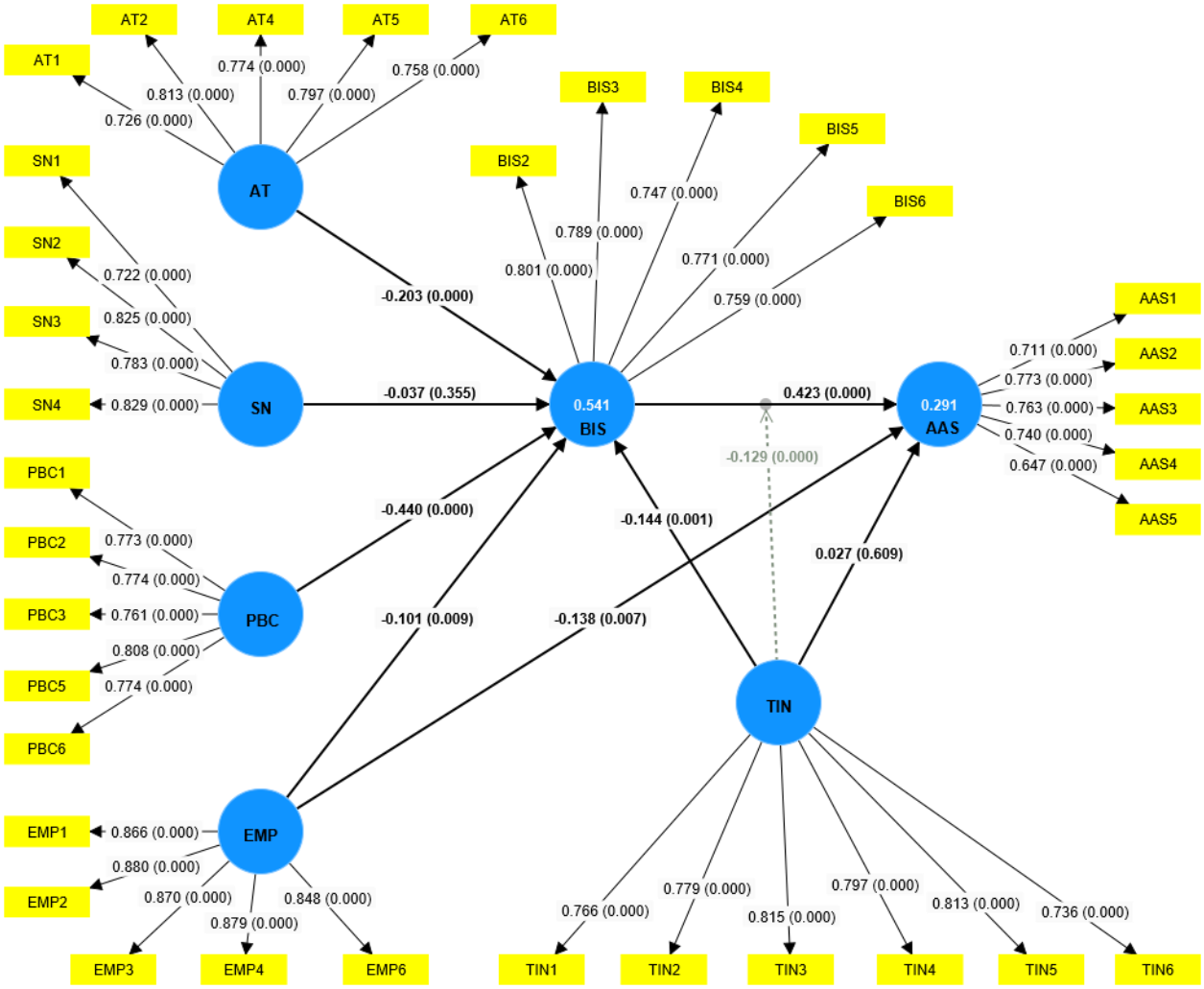

Figure 3: Structural Model.

6. Discussion

This study offers a comprehensive understanding of the factors influencing cyberbullying behaviours among adolescents, incorporating constructs such as attitudes, behavioural intentions, empathy, perceived control, and teacher intervention. The findings align with and extend existing literature, offering valuable insights into both the nature of cyberbullying and the practical implications for interventions. The role of attitudes towards cyberbullying emerged as particularly significant in reducing students' intentions to engage in cyberbullying. This supports previous research, including studies by **Shaikh *et al.*** (2021) and **Buelga *et al.*** (2020), which emphasize the importance of reshaping adolescents' attitudes. Positive attitude changes are essential for reducing the likelihood of cyberbullying, as they help foster less aggressive and more responsible behaviour. As highlighted in these studies, addressing and altering attitudes is a key strategy for mitigating cyberbullying incidents.

Interestingly, the study found that subjective norms had an insignificant effect on behavioural intentions regarding cyberbullying. This finding diverges from some previous studies, such as **Mishra *et al.*** (2018), where subjective norms were found to play a significant role in influencing behaviours. The inconsistency underscores the contextual nature of subjective norms. In the context of cyberbullying, cultural and social influences may not exert as strong a driving force, as adolescents may be less influenced by peer expectations in this area. This highlights the variability in the impact of subjective norms across different environments and suggests that, in the case of cyberbullying, other factors such as personal attitudes and perceived control may be more influential.

The significant inverse relationship between PBC and intentions to engage in cyberbullying is consistent with the TPB, supporting findings from **Corkum and Shead** (2023), **Schultze-Krumbholz *et al.*** (2020), **Shaikh *et al.*** (2020), and **Wang and Ngai** (2020). These studies emphasize that greater perceived control over one's actions can effectively reduce the intention to engage in harmful behaviours like cyberbullying. The present study reinforces the notion that empowering students with a sense of control can serve as a protective factor, aligning with the broader theoretical framework of the TPB. In summary, the findings offer critical insights for interventions aimed at reducing cyberbullying. Strategies targeting attitude change, increasing perceived control, and involving teacher intervention can play a crucial role in

mitigating cyberbullying behaviours. However, the lack of impact from subjective norms suggests that more emphasis should be placed on individual factors rather than broader social expectations. Future research could explore the role of cultural contexts in shaping subjective norms and their influence on cyberbullying, providing further insights into the complexity of this issue.

The protective role of empathy in mitigating both the intentions and actual engagement in cyberbullying is a pivotal finding of this study, aligning with previous research that highlights empathy as a deterrent to cyberbullying behaviours (**Hayashi; Tahmasbi**, 2022; **Falla *et al.***, 2021; **Jiang *et al.***, 2021; **Liu *et al.***, 2023). Empathy, defined as the ability to understand and share the feelings of others, plays a crucial role in educational settings, acting as a barrier against harmful behaviours like cyberbullying. Programs designed to enhance empathy among students can serve as effective interventions to reduce cyberbullying incidents, fostering a more supportive and inclusive environment. By nurturing empathy, educational institutions can create spaces where students are less likely to engage in harmful online behaviours, reflecting a broader effort to build positive school climates.

The relationship between behavioural intentions and actual cyberbullying behaviour reinforces the predictive power of intentions in shaping future actions. This result is consistent with prior studies (**Barlett *et al.***, 2021; **Grover; Raju**, 2023; **Jain; Agrawal**, 2021; **Piccoli *et al.***, 2020; **Ryoo *et al.***, 2024; **Henares-Montiel *et al.***, 2022), which have demonstrated that the intention to engage in cyberbullying is a strong predictor of subsequent actions. These findings underscore the importance of addressing behavioural intentions in interventions, as changing students' intentions toward cyberbullying can effectively influence their actual behaviours. Programs that focus on altering the attitudes and intentions of students are thus crucial in preventing cyberbullying, especially given the strength of this link.

Teacher intervention emerged as an important factor in reducing students' intentions to engage in cyberbullying. However, the study also found that such interventions might not be effective in directly reducing the occurrence of cyberbullying behaviours. The negative relationship between teacher intervention and behavioural intentions, alongside its moderating role in the intention-behaviour link, suggests that specific types of teacher interventions may be more effective than others in addressing cyberbullying. This is in line with studies that emphasize the role of teachers in shaping students' behaviours (**Benrazavi**, 2021; **Nagar; Talwar**, 2023; **Sethi; Scales**, 2020). Therefore, interventions should not solely focus on the direct impact of teacher intervention but also consider its moderating role in shaping students' intentions and behaviours related to cyberbullying. The findings offer a solid foundation for addressing the issue of cyberbullying among adolescents. The interplay between attitudes, intentions, empathy, perceived control, and teacher intervention highlights the need for multilevel interventions. Consequently, educators, policymakers, and researchers are well-positioned to develop tailored strategies based on these insights, taking into account the unique dynamics of the school environment. Furthermore, this study underscores the necessity for ongoing research to adapt interventions in response to emerging trends and the evolving behaviours of adolescents in the digital realm.

7. Conclusion and Policy Implications

This study, guided by TPB, explored cyberbullying behaviours among adolescents in KSA, examining the influence of AT, BIS, EMP, PBC, SN, and TIN on AAS. A total of 724 adolescents were randomly sampled across KSA, with a cross-sectional design ensuring a reliable snapshot of cyberbullying behaviours. The findings highlight that attitudes and intentions are key predictors of cyberbullying. Positive attitudes were linked to lower intentions, while empathy acted as a protective factor. Behavioural intentions strongly predicted actual behaviour, emphasizing their role in cyberbullying involvement. Perceived behavioural control was shown to reduce the likelihood of cyberbullying, highlighting the importance of individual control. Subjective norms had an insignificant effect on cyberbullying intentions, contradicting some prior findings. Furthermore, teacher intervention was negatively associated with students' intentions, demonstrating the potential of teachers to deter negative cyberbullying intentions. The moderating effect suggests that teachers play a pivotal role in reducing the translation of intentions into actions, emphasising their critical role in preventing cyberbullying. Addressing antisocial cyber behaviour necessitates a collaborative approach involving teachers, students, schools, and colleges. Teachers should be empowered through anti-cyberbullying programmes, and educational institutions must implement clear policies to prevent and address such incidents.

The study presents policy implications for targeted teacher interventions as a potential deterrent against cyberbullying within the KSA context. The limited impact of subjective norms suggests the need for interventions that extend beyond altering perceived social pressures. Practical implications highlight the importance of cultivating empathy as a preventive strategy, aligning with broader initiatives aimed at enhancing social and emotional skills among KSA adolescents. Educational programmes should incorporate digital literacy to equip students with responsible online behaviour skills. Collective efforts involving students, parents, teachers, and communities can form a united front against cyberbullying. The use of social media for awareness campaigns and educational initiatives can amplify impact, promoting a culture of digital citizenship and empathy. Future research should explore longitudinal studies to examine temporal dynamics. Efficacy studies on teacher interventions and the exploration of mediating factors, such as peer relationships, offer opportunities for deeper insights. Initiatives targeting diverse populations can enhance the generalisability of the findings. This research sheds light on the

pathways and complexities of cyberbullying behaviours among KSA adolescents. As educators, policymakers, and researchers navigate the future, this study provides valuable guidance for interventions, policies, and future research in the ongoing effort to create safer online environments for current and future generations.

7.1. Strengths and Limitations

This study sheds light on how cyberbullying affects adolescents and schoolchildren. Modelling and a large sample size gave this study robustness and statistical power by giving generalisable estimates. Despite these strengths, there are also drawbacks. First, this study included only a few schools despite our best efforts to obtain nationwide data. Thus, our findings may not apply nationwide. This is especially true given the country's heterogeneity. However, as the first cyberbullying study in the country, we believe its findings may be useful for policymakers and give a baseline. Another drawback is that we only studied middle and high schools. This may misrepresent adolescent cyberbullying. Our limits prevented us from doing a pre- and post-analysis of stresses and their effects on their health and daily life. Our study concludes that due to the country's heterogeneity, stratifying our data by region and/or country would have revealed regional and state-specific cyberbullying barriers and facilitators. Still, this study's findings are vital to understanding cyberbullying and will be valuable in the future.

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