# The Relationship between the Use of Social Networking Sites, Perceived Social Support and Spirituality on Loneliness among University Students in Klang Valley, Malaysia

Nur Nadhira Izzati Mohamed[2], Aini Azeqa Ma'rof[1,2], Abdul Hadi Sulaiman[1]

[1]Institute for Social Science Studies, Universiti Putra Malaysia, 43400 Serdang, Selangor, MALAYSIA,  [2]Faculty of Human Ecology, Universiti Putra Malaysia, 43400 Serdang, Selangor, MALAYSIA.
Email: azeqa@upm.edu.my

**Abstract**
Loneliness is a prevalent concern among university students that prompts substantial scholarly attention. This study examines the complex relationship between social networking site usage, perceived social support, spirituality, and loneliness among undergraduates in the Klang Valley, Malaysia. Data from 303 participants from three Malaysian public universities in Klang Valley were gathered using self-administered questionnaires. Measurement tools included the Facebook Intensity Scale (FBI) for social networking, the Multidimensional Scale of Perceived Social Support (MSPSS), the Daily Spiritual Experience Scale (DSES), and the UCLA Loneliness Scale (ULS-8). Findings indicated a substantial portion of respondents reporting high social networking site usage and perceived social support, while a significant portion reported lower spirituality and loneliness. Gender-based demographic analysis revealed male undergraduates experiencing less loneliness compared to their female counterparts, though no significant differences emerged in social networking site usage, perceived social support, or spirituality. Correlation analyses revealed no significant relations between loneliness and social networking site usage or spirituality. However, perceived social support showed a notable negative correlation with loneliness. Multiple regression analysis identified perceived social support as the exclusive predictor of undergraduate students' loneliness. In conclusion, this study explores the interplay of social networking site usage, perceived social support, spirituality, and loneliness among Klang Valley undergraduate students. It highlights that while social networking site usage and spirituality may not directly contribute to loneliness, perceived social support significantly mitigates loneliness. These findings have implications for interventions and support strategies to enhance the well-being of university students dealing with loneliness.

**Keywords:** Use of Social Networking Sites, Perceived Social Support, Spirituality, Loneliness, University Students

**Introduction**
Governments worldwide have imposed lockdown measures affecting educational institutions and businesses. Consequently, a swift shift toward online distance learning was necessitated. The pandemic-induced lockdowns have raised concerns about loneliness, a psychosocial phenomenon that affects individuals across the spectrum, albeit to varying degrees. Recent data from a global survey by Statista (2021) indicates that approximately 33 percent of adults worldwide have reported experiencing feelings of loneliness.

University students, a dynamic and diverse demographic, have not been immune to the impacts of loneliness. Research by Von Soest et al (2020) highlights that loneliness tends to be more prevalent in late adolescence and early adulthood, a stage encompassing the university years. Notably, recent studies (Horigian et al., 2021; Flett & Zangeneh, 2020) underscore that compared to older individuals, young people have experienced a higher prevalence of loneliness. Demkowicz et al (2022) further suggests that young adults may experience loneliness more profoundly and distressingly than other age groups, possibly due to the transitional nature of the university years.

The unique circumstances faced by college and university students during their academic journey including relocation and the establishment of new social networks have contributed to their heightened susceptibility to loneliness (Hysing et al., 2020; Bordini et al., 2021). Loneliness among students has broader implications particularly concerning their academic pursuits. Yalçin et al (2021) found that students reporting high levels of loneliness tend to experience academic difficulties including hindered academic progress and overall achievement.

Furthermore, loneliness can adversely affect various aspects of student life extending to task management, team roles, and relationship performance (Yung et al., 2023). This impact is mediated by reduced affective commitment and to a lesser extent, increased surface acting. Additionally, the concept of learning burnout is closely associated with student loneliness (Dopmeijer et al., 2023). Academic pressure, excessive workload, and individual psychological variables such as emotional weariness, negative attitudes, and a sense of inadequate personal accomplishment can collectively contribute to this phenomenon (Edú-Valsania et al., 2022). Thus, the circumstances faced by university students have amplified the issue of loneliness with potentially far-reaching consequences for their academic pursuits and overall well-being. Therefore, this study sought to delve into the factors that associate to loneliness such as social networking sites, perceived social support, and spirituality.

**Loneliness among University Students**
Governments worldwide have imposed lockdown measures affecting educational institutions and businesses. Consequently, a swift shift toward online distance learning was necessitated. The pandemic-induced lockdowns have raised concerns about loneliness, a psychosocial phenomenon that affects individuals across the spectrum, albeit to varying degrees. Recent data from a global survey by Statista (2021) indicates that approximately 33 percent of adults worldwide have reported experiencing feelings of loneliness.

University students, a dynamic and diverse demographic have not been immune to the impacts of loneliness. Research by Von Soest et al (2020) highlights that loneliness tends to be more prevalent in late adolescence and early adulthood, a stage encompassing the university years. Notably, recent studies underscore that compared to older individuals, young people have experienced a higher prevalence of loneliness (Baretto et al., 2021; Wang et al., 2020). Parry, Loren and Varese (2021) further suggests that young adults may experience loneliness more profoundly and distressingly than other age groups, possibly due to the transitional nature of the university years.

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Furthermore, loneliness can adversely affect various aspects of student life, extending to task management, team roles, and relationship performance (Abelson et al., 2023). This impact is mediated by reduced affective commitment and, to a lesser extent, increased surface acting. Additionally, the concept of learning burnout is closely associated with student loneliness (Dopmeijer et al., 2022). Academic pressure, excessive workload, and individual psychological variables such as emotional weariness, negative attitudes, and a sense of inadequate personal accomplishment can collectively contribute to this phenomenon (Edú-Valsania et al., 2022).

In summary, the circumstances faced by university students have amplified the issue of loneliness with potentially far-reaching consequences for their academic pursuits and overall well-being. Current research underscores the need for strategies and interventions to address the multifaceted challenges posed by loneliness in this vulnerable population.

In light of the above concerns, this study aims to look at the social networking sites, perceived social support, spirituality and loneliness with specific research questions as follows:
1. What are the levels of social networking sites, perceived social support and spirituality on loneliness among university students in Klang Valley, Malaysia?
2. What are the relationships between social network sites, perceived social support and spirituality on loneliness among university students in Klang Valley, Malaysia?
3. What are the unique factors that predicts loneliness among university students in Klang Valley, Malaysia?

**Factors of Loneliness**
*Social Networking Sites*
Contemporary society is marked by the ubiquitous presence of social networking, with Social Networking Sites (SNSs) emerging as popular platforms for global connectivity, communication, and information exchange. According to Ellison and Boyd (2013), SNSs can be defined as platforms where users maintain identifiable profiles featuring user-generated content, connections, and interactions with others. These sites serve as digital communities where individuals of all ages, especially adolescents and young adults, congregate primarily for communication purposes (Verduyn et al., 2021).

Social networking site usage is categorized into passive, active, and interactive activities (Verduyn et al., 2022). Interactive usage involves active engagement such as commenting and liking posts. Active usage encompasses content creation, while passive usage involves content consumption without interaction. Recent data by Kemp et al (2020) reveals that over three billion individuals worldwide actively use SNSs, with platforms like Facebook, YouTube, WhatsApp, Instagram, and TikTok leading the way.

SNSs offer users diverse functionalities, including connectivity, visibility, accessibility, persistence, and social feedback (Mansour, 2021). Users can communicate through various means such as chat, messaging, email, video, and discussion groups (Jain et al., 2021). While these platforms enhance accessibility and convenience, excessive usage can have detrimental effects on psychological well-being (Reinecke & Trepte, 2014). Research suggests that excessive time on SNSs may lead to issues like internet addiction, negatively impacting social relationships, sleep patterns, self-esteem, and emotional well-being (Lu, 2023; Joshi & Sondhi, 2022; Marciano et al., 2022).

Loneliness has been associated with social networking site usage in prior studies. The digital age has paradoxically increased social isolation despite heightened connectivity through screens (Yang et al., 2023). Frequent SNS usage has been linked to higher rates of loneliness among young adults (Bonsaksen et al., 2021). Some studies argue that increased SNS usage is correlated with greater loneliness and lower self-esteem (Pop et al., 2022; Chen & Gao, 2023).

Loneliness can lead to feelings of helplessness, social isolation, and reduced life satisfaction (Lisitsa et al., 2020). However, recent research suggests that SNSs can offer alternatives for combating loneliness. Video chats and online social networking can help individuals maintain connections during times of social isolation (Hajek & König, 2023).

Mobile applications, such as smartphone apps have proven effective in reducing loneliness and enhancing feelings of connection among users (Lim et al., 2019). Moreover, interactive social media usage is associated with reduced loneliness while passive usage is linked to higher levels of loneliness (Vally et al., 2019). Overall, the prevalence of social networking sites has transformed communication and connectivity patterns. However, excessive usage may have adverse psychological consequences including heightened loneliness. Understanding the complex interplay between SNS usage and loneliness remains a crucial area of investigation in contemporary society.

### *Perceived Social Support*
Social support is a fundamental aspect of human life. Şahin et al. (2019) define social support as the actual or potential assistance and resources provided by individuals, groups, communities, and systems with whom an individual has a relationship. According to Barrera's theory of social support (1986), it plays a crucial role in mitigating the physical and psychological impacts of stress. Additionally, based on the self-determination theory, social support can facilitate personal growth and the realization of internal potential (Banerjee & Halder, 2021). This support can manifest as tangible aid including financial assistance, goods, and services, or as perceived social support, which reflects an individual's belief in the availability of assistance when needed (Sadeghi et al., 2019).

Social support has two primary components which is perceived social support and received social support (Grey et al., 2020). Received support involves the provision of emotional, informational, and instrumental aid from close confidants, family, friends, or colleagues (Varga et al., 2023). Perceived social support, on the other hand, refers to an individual's belief in the availability of positive or negative social support that meets their needs (Omerov et al., 2011).

Research indicates that perceived social support plays a significant role in emotional well-being, especially in challenging situations (Poudel et al., 2020). It has been associated with improved mental well-being, enhanced coping abilities, and reduced levels of depression and post-traumatic stress disorder (PTSD) (Yu et al., 2020; Wang et al., 2020). In contrast, low perceived social support can lead to various psychological, social, and academic issues, particularly among students (Siddiqui et al., 2019). Perceived social support is a key predictor of loneliness, with higher levels of perceived support being associated with lower levels of loneliness (Groarke et al., 2020). This variable plays a significant role in the relationship between attachment and loneliness (Odekerken-Schröder et al., 2020; Saltzman et al., 2020). It has been found to act as a protective factor against loneliness in times of stress (Szkody et al., 2021; Lisitsa et al., 2020).

Notably, the perception of support often holds greater significance in stressful conditions than the actual support received (Li et al., 2021). In situations where individuals experience social isolation or distancing, perceived social support can help alleviate feelings of loneliness and depression (Erzen & Çikrikci, 2018). Moreover, research indicates that perceived social support and loneliness are inversely correlated. Multiple studies have found negative associations between perceived social support and loneliness among different populations, including college students and adolescents (Liang et al., 2019; Machado et al., 2023; Lee & Goldstein, 2016).

Overall, social support, particularly perceived social support, plays a crucial role in individuals' emotional well-being and can serve as a protective factor against loneliness. Understanding the dynamics of perceived social support and its impact on loneliness remains a vital area of research.

**Spirituality**
Spirituality encompasses a wide array of definitions stemming from various disciplines and perspectives. According to Burke et al (1999), spirituality is a sense of connectedness to a higher power and openness to the infinite beyond human existence and experience. Alternatively, it has been described as the way in which people understand and live their lives in view of their ultimate meaning and value (Muldoon and King, 1995). However, spirituality often remains subconscious for many individuals and it is sometimes conflated with religion typically surfacing during significant life events such as illness or death (Lepherd, 2020).

Understanding the distinction between spirituality and religion is essential when exploring the concept of spirituality. Religion, as defined by Ammerman (2020), involves a systematic approach to the supernatural world through human activities, encompassing narratives, beliefs, and practices. Religions often incorporate specific beliefs about life after death, along with rules and guidelines governing human behavior within a social group (Rai & Fiske, 2011). In essence, religion is synonymous with faith or belief systems. Conversely, spirituality

represents a multifaceted quest for transcendent meaning in life, rooted in the reflection of human experiences at the level of being (Fisher, 2011).

Spirituality is a highly individualized experience manifesting in various forms and degrees of intensity that differ among individuals (Lepherd, 2020). It can be influenced by factors such as ethnic origin, culture, and environment, even within the same broader cultural context (Pirnazarov, 2020). The faith associated with spirituality, religion, and personal beliefs can enhance well-being which positively impacting one's life and overall health (Cruz et al., 2017). Engaging in spiritual activities has been linked to increased feelings of spiritual connection and support, as well as reduced depression and anxiety that fosters a sense of serenity and calmness (Siddall, 2015). However, studies such as Kraus et al (2014), suggest that many Malaysian youth score low on spirituality due to limited involvement in social institutions like community organizations and places of worship.

Spirituality can also influence loneliness, as suggested by Andre (1991), who proposed that individuals may mitigate loneliness by finding solace in the "emotional experience of a soothing presence." Those with high levels of spirituality tend to experience fewer physical and depressive symptoms, as well as reduced loneliness (Kirkpatrick et al., 1999). Conversely, when spiritual well-being is significantly threatened, it may result in mental disorders such as loneliness, depression, and a lack of purpose in life (Mousavimoghadam & Bagheri, 2015).

Strengthening religious teachings has been associated with improved spiritual health and lower levels of depression and loneliness (Heidari et al., 2018). A study by Kavoosian et al (2018) highlighted the importance of spiritual health in reducing isolation and loneliness among the elderly. Among young people, elements like spiritual health, leading a meaningful life, and feeling connected to an infinite source are crucial for enhancing physical and mental well-being while reducing loneliness (Enjezab et al., 2021). Moreover, spirituality has been linked to stress reduction in the face of loneliness and helplessness, improved quality of life, increased longevity, decreased anxiety and depression, and lower suicide rates (Cheng et al., 2021; Chafiri et al., 2017).

Despite these findings, there remains limited evidence regarding the association between spirituality and loneliness, particularly among university students in Malaysia. A comprehensive understanding of the relationship between spirituality and loneliness in this specific demographic is lacking, warranting further investigation.

**Method**
**Participants**
Four hundred participants (n women = 248; n men = 152) among Johor state youth were recruited. Participants completed a series of self-report questionnaires (described below) using an online survey management platform. The average age of participants was 19.48 years (SD = 3.94; range = 15– 30). The self-reported ethnicities of participants were Malay (83.0%), Chinese (13.75%), Indian (1.5%) and others (1.75%). Approximately 83.5% of participants were Muslims, 11.25% were Buddhist, 3.5% were Christian, 1.5% were Hindu, and .25% other religion.

**Procedure and Measures**

After participants had completed the informed consent process, they anonymously completed the online survey packet, consisting of the following self-report measures.

**Social Networking Sites**

The Social Networking Intensity Scale (SNIS), adapted from Ellison et al (2007), Facebook Intensity Scale, serves as the assessment tool for gauging the depth and extent of social networking site usage among participants. This 7-item modified scale extends beyond mere frequency of use, capturing the emotional attachment and integration of social networking sites into daily activities. Each item is rated on a five-point Likert scale, yielding a total score range from 7 to 35, with higher scores indicating a more intense relationship with social networking platforms. Unlike the original Facebook Intensity Scale, which was focused solely on Facebook, the adapted version in this study broadens its scope to include social networking sites in general. Items on the scale, for example, include statements like "Social Networking Sites (SNSs) are part of my everyday activities," "SNSs have become part of my daily routine," and "I feel out of touch when I haven't logged onto an SNS for a while." In the current study, the SNIS had a Cronbach's alpha of .83.

**Perceived Social Support**

The Multidimensional Scale of Perceived Social Support (MSPSS), developed by Zimet et al (1988), serves as a self-administered 12-item instrument to gauge the adequacy of social support an individual perceives from three key sources: family, friends, and significant others. Recognized for its extensive validation across diverse cultures and settings, the MSPSS has been widely employed in assessing social support. The measure adopts a 'retrospective' approach, allowing respondents to recall the level of support they have received from these sources throughout their lives. Each item is rated on a seven-point Likert scale that ranges from 1 (very strongly disagree) to 7 (very strongly agree), culminating in an overall score range of 12 to 84. Higher scores on the MSPSS indicate a greater perception of social support. This makes the MSPSS both a reliable and user-friendly tool for both researchers and respondents. Example items include, "My family really tries to help me," "I have friends with whom I can share my joys and sorrows," and "There is a special person in my life who cares about my feelings." In the current study, the internal consistency reliability for the FFMQ was found to be .88.

**Spirituality**

The Daily Spiritual Experience Scale (DSES), devised by Underwood and Teresi (2002), is a truncated six-item version adapted for the General Social Survey (GSS). This self-report instrument aims to capture ordinary, day-to-day experiences of a connection with the transcendent, encompassing various spiritual facets such as awe, gratitude, and compassionate love, as well as internal states like inspiration and profound inner peace. The scale uses a 6-point Likert system for responses, with categories ranging from "many times a day" to "never or almost never," resulting in an overall score range from 6 to 36. The ultimate aim of the DSES is to assess the nuanced emotional and experiential aspects of an individual's spiritual life on a daily basis. Example items include: "I feel God's presence," "I find strength and comfort in my religion or spirituality," and "I desire to be closer to God or in union with the divine." In the current study, the internal consistency reliability for the DSES was found to be .85.

**Loneliness**

The UCLA Loneliness Scale, initially introduced with 20 items in 1978, has been adapted to a shorter 8-item version known as the ULS-8 revised scale by Hays and DiMatteo (1987), including two positively phrased items such as "I am an outgoing person" and "I can find companionship when I want it." The items are rated on a 4-point Likert scale, ranging from "never" to "always," and are designed to gauge subjective experiences of loneliness and social isolation without directly using the term "lonely" to minimize response bias. The total possible score ranges from 8 to 32, with higher scores indicating greater feelings of loneliness. In the current study, the internal consistency reliability for the ULS-8 was found to be .82.

**Data Analysis**

Analyses were conducted using SPSS 29.0. Descriptive statistics and correlations among study variables were calculated. Then, a bivariate correlation analysis was conducted between mental health self-stigma (two forms of ISMI-10), mindfulness (FFMQ) and psychological distress (GHQ-12) to examine whether there was a relationship between the two variables. Finally, a regression analysis was conducted to evaluate whether mental health self-stigma, psychological distress self-stigma, or mindfulness, served as unique predictors for psychological distress.

**Results and Discussion**

Table 1 reveals that the majority of respondents exhibited moderate to high usage of social networking sites (97.0%) and high levels of perceived social support (64.0%). Additionally, a substantial portion of the sample reported low levels of spirituality (69.0%). In terms of loneliness, half of the sample experienced low loneliness (50.5%), while a considerable percentage experienced moderate loneliness (45.2%).

The high usage of social networking sites among the majority of participants resonates with the findings that social media can play an essential role in young adults' social lives. This could either exacerbate or ameliorate feelings of loneliness depending on the nature and quality of interactions (Primack et al., 2017; Smith and Anderson, 2018). Meanwhile, perceived social support was high among the majority of respondents, supporting to Uchino's (2004) work suggesting that social support serves as a protective factor against various psychological stresses including loneliness.

The predominance of low spirituality levels in the sample is significant, given that spirituality often serves as a coping mechanism in stressful times and can be inversely related to feelings of loneliness (Cotton et al., 2006). Finally, the levels of loneliness reported highlight that loneliness is a concern among this population, supporting Hawkley and Cacioppo's (2003) finding that loneliness is not uncommon among young adults.

Table 1

*Level of study variables*

| Level | n | % | Mean | SD | Min | Max |
|---|---|---|---|---|---|---|
| Use of Social Networking Sites | | | 3.59 | 0.57 | 7 | 35 |
| Low (7 – 16.33) | 9 | 3.0 | | | | |
| Moderate (16.34 – 25.67) | 137 | 45.2 | | | | |
| High (25.68 – 35) | 157 | 51.8 | | | | |
| Perceived Social Support | | | 5.42 | 0.92 | 12 | 84 |
| Low (12 – 36) | 2 | 7 | | | | |
| Moderate (37 - 61) | 107 | 35.3 | | | | |
| High (62 – 84) | 194 | 64 | | | | |
| Spirituality | | | 2.67 | 1.36 | 6 | 36 |
| Low (12 - 36) | 209 | 69 | | | | |
| Moderate (37 - 61) | 52 | 17.2 | | | | |
| High (62 – 84) | 42 | 13.9 | | | | |
| Loneliness | | | 2.04 | .69 | 8 | 32 |
| Low (8 - 16) | 153 | 50.5 | | | | |
| Moderate (17 - 25) | 137 | 45.2 | | | | |
| High (26 -32) | 13 | 4.3 | | | | |

Referring to Table 2, t-test was conducted to examine the gender differences in levels of loneliness between male and female students. Results indicate a significant difference in loneliness scores between females (M = 2.21, SD = 0.68) and males (M = 1.79, SD = 0.61), t(281.08) = -5.69, p < .001. The findings reveal a significant gender disparity in the experience of loneliness, with females reporting higher levels of loneliness than males. Previous research supports the notion that women are generally more susceptible to experiencing loneliness than men (Matthews et al., 2019; Maes et al., 2019). Factors contributing to this difference often include societal expectations and pressures, different coping mechanisms, and possibly biological factors (Bhargava et al., 2021).

These results align with broader societal trends, where despite increasing awareness about gender equality, women may still face unique stressors that lead to increased feelings of loneliness (Leigh, et al., 2023; Shellock, et al., 2022). Such disparities underscore the need for gender-specific interventions to tackle loneliness, especially in the context of educational institutions where such feelings can significantly impact academic performance and overall well-being (Tian et al., 2023).

Given the noted gender differences in loneliness, future research should delve into understanding the underlying mechanisms that contribute to this disparity. Interventions

should be designed keeping in mind the gender-specific needs and challenges, and they should be incorporated into broader mental health programs at universities (Dyrbye et al., 2021).

Table 2
*Gender difference on loneliness*

| Variable | Gender | | | | t(df) | Sig. |
|---|---|---|---|---|---|---|
| | Female | | Male | | | |
| | Mean | Sd. | Mean | Sd. | | |
| Loneliness | 2.21 | 0.68 | 1.79 | 0.61 | --5.69 (281.08) | 0.001 |

Pearson correlation analysis was conducted to explore the relationships between loneliness, use of social networking sites, perceived social support, and spirituality. The results in Table 3 showed a significant but small positive correlation between loneliness and the use of social networking sites (r = .031, p < .05). A moderate negative correlation was observed between loneliness and perceived social support (r = -.279, p < .01). No significant correlation was found between spirituality and loneliness.

The small but significant positive correlation between loneliness and the use of social networking sites is noteworthy. Prior research by Primack et al (2017) and Smith and Anderson (2018) have shown a complicated relationship between social media use and feelings of loneliness or social isolation. The findings suggest that while social networking sites may offer a platform for social engagement, they could also contribute to feelings of loneliness.

The moderate negative correlation between loneliness and perceived social support resonates with established literature, which shows that social support acts as a protective factor against loneliness (Uchino, 2004; Hawkley & Cacioppo, 2010). Individuals with higher social support are less likely to experience feelings of loneliness, suggesting the crucial role of supportive networks in mental well-being. The absence of a significant correlation between spirituality and other examined variables is intriguing. This contradicts some studies that show spirituality as an effective coping mechanism against feelings of loneliness and distress (Cotton et al., 2006). The lack of correlation suggests that other variables not included in the study could be moderating the relationship between spirituality and feelings of loneliness.

The correlations among these variables imply a complex interplay between the use of social networking sites, perceived social support, and feelings of loneliness. Future research should explore these relationships further, possibly considering other moderating variables like academic stress, family background, or mental health status to provide a more comprehensive understanding (Matthews et al., 2019; Maes et al., 2019).

Table 3

*Correlations among study variables*

|  | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 1. Loneliness | - |  |  |  |
| 2. Use of Social Networking Sites | .031* | - |  |  |
| 3. Perceived Social Support |  | -.279** | - |  |
| 4. Spirituality |  |  | .031 | - |

SNIS, Social Networking Intensity Scale; MSPSS, Multidimensional of Perceived Social Support; DSES, Daily Experience Spiritual Scale; ULS-8, Loneliness Scale.
N = 400, * p < .05, ** p < .01

A multiple regression was conducted to explore the impact of the use of social networking sites and perceived social support on loneliness. The model was significant, $F(2, 300) = 9.77$, $p < .01$, explaining 89% of the variance in loneliness ($R^2 = .89$, Adjusted $R^2 = .80$). Perceived social support significantly predicted loneliness ($\beta = -.31$, $p < .001$), while the use of social networking sites showed a trend towards significance ($\beta = .10$, $p = .07$). The use of social networking sites showed a trend toward predicting loneliness, although it was not statistically significant at the 0.05 level ($\beta = .10$, $p = .07$). This aligns with previous research indicating that social media use has a complex relationship with loneliness. While some studies argue that it can exacerbate feelings of loneliness (Primack et al., 2017), others suggest it may be a platform for social support (Smith & Anderson, 2018). Perceived social support emerged as a significant predictor of loneliness ($\beta = -.31$, $p < .001$), in line with established literature. Studies consistently indicate that higher levels of social support act as a protective factor against feelings of loneliness (Uchino, 2004; Hawkley & Cacioppo, 2010). Therefore, these findings support the significant role that social support networks play in mitigating feelings of loneliness.

The $R^2$ value of .89 and Adjusted $R^2$ of .80 suggest that the model explains a large proportion of the variance in loneliness. This implies that these factors—especially perceived social support—are important determinants of loneliness and should be considered in any interventions designed to mitigate loneliness among university students (Matthews et al., 2019). Given that the model accounts for a significant proportion of the variance in loneliness, future research should delve deeper into understanding the specific aspects of social networking usage and social support that most significantly impact feelings of loneliness. Researchers should also consider other potential moderating or mediating variables, such as academic stress or mental health conditions, to provide a more nuanced understanding (Maes et al., 2019).

Table 3

*Multiple regression in determining the main predictor of loneliness.*

| Variable | Loneliness | | | |
|---|---|---|---|---|
| | **B** | **SE. B** | **Beta, β** | **p** |
| Use of Social Networking Sites | .13 | .69 | .10 | .07 |
| Perceived Social Support | -.23 | .04 | -.31 | .00 |
| **R²** | .89 | | | |
| **Adjusted R²** | .80 | | | |
| **F** | 9.77 | | | |

**Psychological Implications of perceived social support and use of social networking sites on loneliness.**

Perceived social support has long been considered a crucial buffer against various forms of psychological distress including loneliness. Multiple studies have shown that individuals who perceive themselves as having robust social support networks are less likely to experience loneliness, depression, and anxiety (Uchino, 2004; Hawkley & Cacioppo, 2010). The presence of a reliable social network provides emotional, informational, and instrumental support that can enhance an individual's ability to navigate stressful life events and daily hassles.

The relationship between the use of social networking sites and loneliness is far more nuanced. While these platforms are designed to facilitate social interaction, research indicates that excessive use can exacerbate feelings of isolation and loneliness (Primack et al., 2017). However, some studies have suggested that social networking sites can also act as platforms for social support which can have a positive impact on mitigating feelings of loneliness, especially among specific demographic groups (Smith & Anderson, 2018).

Interestingly, the manner in which social networking sites are used can influence their impact on perceived social support and, consequently, on loneliness. Platforms that encourage meaningful interactions as opposed to superficial connections are more likely to contribute positively to an individual's perception of social support. Therefore, the quality, not just the quantity, of online interactions is essential in understanding their psychological impact (Valkenburg & Peter, 2009).

Research has also indicated gender differences in how social networking sites and perceived social support affect loneliness. Women, who often report higher levels of loneliness than men, are also more likely to seek and give emotional support through social networking platforms (Dhir et al., 2018). This suggests that interventions aimed at reducing loneliness may need to be gender-sensitive, recognizing the distinct ways men and women use technology for social support.

Given the complex interplay between social networking sites, perceived social support, and loneliness, future research needs to delve deeper into understanding these dynamics. Such insights are crucial for developing targeted interventions for loneliness, which could be increasingly vital as social dynamics continue to shift towards digital platforms (Matthews et al., 2019; Maes et al., 2019).

## Limitations and Future Directions

The present research has several methodological and theoretical limitations that warrant attention. First, the study's generalizability is constrained, as the sample population was limited to public university students in the Klang Valley. This specific demographic may not be representative of broader populations of university students, both within Malaysia and globally. Second, the study relied on a single measure for each construct—use of social networking sites, perceived social support, spirituality, and loneliness—potentially limiting the scope and depth of the constructs examined. Multiple measures or scales could offer a more comprehensive understanding of these complex phenomena. Additionally, all variables were assessed using self-reported measures, which opens the possibility of reporting biases such as social desirability or recall bias. Future studies could enhance validity by employing a multi-method, multi-source approach that incorporates behavioral indicators, interviews, or even neurophysiological measures. Fourth, the study's design was cross-sectional and correlational, making it challenging to establish causal relationships between the variables examined. Longitudinal studies could provide more insight into the causal pathways and how these relationships evolve over time. Lastly, while the study sought to explore the influence of spirituality on loneliness, the measure used for spirituality in this research may not capture its multidimensional nature or its nuanced effects on loneliness. Future work could benefit from employing more robust, psychometrically validated measures of spirituality and exploring its potential interaction with other variables such as mental health and cultural background.

## Conclusion

The present study sought to investigate the relationships between various factors—namely, the use of social networking sites, perceived social support, and spirituality—and their influence on loneliness among public university students in the Klang Valley. The research offers a comprehensive perspective on the multifaceted nature of loneliness, emphasizing that it is influenced by a complex interplay of social and personal variables.

These findings contribute to the growing body of literature that seeks to understand the psychological well-being of university students particularly in a digital age where online interaction is increasingly prevalent. This study underscores the need for a nuanced understanding of how online and offline social factors, as well as personal beliefs like spirituality, interact to impact feelings of loneliness. Such insights are invaluable for educators, parents, and mental health professionals who are involved in supporting the emotional and psychological well-being of university students.

In conclusion, this research invites future studies to delve deeper into these dynamics, and it highlights the importance of multi-disciplinary approaches in understanding and tackling loneliness. As the landscape of social interaction continues to evolve, it is increasingly crucial to consider a broad array of factors when examining the mental and emotional health of young adults in educational settings.

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