

Social Media Use among Secondary School Students in Malaysia: Age and Gender Trends and Multi-Platform Engagement

Halim Ismail, Arifin Mamat, Hasniza Ibrahim, Nazatul Akmar Mokhtar,
Muhammad Noor Aiman Zailan

Kulliyyah of Education, International Islamic University Malaysia (IIUM), Kuala Lumpur, Malaysia
Email: halimismail@iium.edu.my, drarifin@iium.edu.my, hasnizaibrahim@iium.edu.my, nazatulakmar@iium.edu.my, matnoman8@gmail.com

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Abstract

The increasing integration of social media into the daily lives of adolescents presents both opportunities and challenges for educators, parents, and policy-makers. The objective of this study is to investigate the patterns of social media account ownership and platform usage among secondary school students, with particular focus on age-related trends, gender differences, and the emergence of multi-platform engagement in Malaysia. This quantitative study surveyed 373 secondary school students, collecting data on the number of social media accounts they owned, the specific platforms they used, and their patterns of engagement. Descriptive analysis was conducted to examine variations by gender and age group. The findings reveal an apparent gender disparity, with female students demonstrating higher rates of multi-account ownership and greater engagement on platforms such as TikTok and Instagram. A strong positive relation was observed between age and the number of accounts owned, with older students (aged 17) exhibiting the highest levels of multi-platform usage. TikTok and WhatsApp emerged as the dominant platforms across all ages. The study concludes that students are not passive consumers but active and strategic users of social media, constructing personalised digital ecosystems to serve their various needs. These patterns underscore the importance of developing age-appropriate and gender-sensitive digital literacy programs that address both the opportunities and risks of multi-platform engagement. The impact of this study lies in its potential to inform educators, parents, and policymakers about the evolving digital behaviours of students and to guide the development of targeted educational strategies that promote safe, responsible, and critical engagement with social media platforms.

Keywords

Social Media, Secondary School Students, Multi-Account Ownership, Gender Differences, Age Trends

1. Introduction

In recent years, social media has become an integral part of young people's lives, influencing not only how they communicate but also how they learn, form identities, and engage with the world (Boyd, 2014; Al-Menayes, 2015). A study found that students mainly use various social media platforms to fulfil their education, communication and entertainment needs (Asaduzzaman, 2023).

Platforms such as TikTok, Instagram, WhatsApp, and YouTube are now dominant spaces for social interaction among students, while newer or niche platforms like Discord, Reddit, and Telegram are gaining traction among specific user groups (Pew Research Centre, 2023). The diversity of platforms reflects an evolving digital ecosystem where students maintain multiple online presences across different platforms, each serving distinct social, educational, or entertainment functions (Anderson & Jiang, 2018).

Understanding which platforms students use—and how these patterns vary by age and gender—is essential for educators, parents, and policymakers seeking to foster responsible digital citizenship and leverage social media for educational engagement (Livingstone & Helsper, 2007). Furthermore, insights into students' social media behaviours can inform strategies to address issues such as privacy, cyberbullying, and mental well-being, which are increasingly linked to online experiences (Best, Manktelow, & Taylor, 2014).

This study aims to examine the patterns of social media platform usage among students, with a focus on engagement in terms of age, gender, and platform choice. By analysing both mainstream platforms (TikTok, Instagram, WhatsApp) and “additional” platforms (YouTube, Discord, Facebook, etc.), the research seeks to provide a comprehensive view of the multi-platform digital habits of today's student population in Malaysia.

2. Literature Review

The adoption of social media among young people has surged over the past two decades, transforming how students communicate, socialise, and learn (Boyd, 2014; Anderson & Jiang, 2018). According to the Pew Research Centre (2023), nearly all adolescents today engage with at least one social media platform, and many maintain active presences across multiple platforms. This multi-platform behaviour reflects a dynamic and evolving media landscape, where platforms serve different purposes depending on the user's age, gender, and social interests (Livingstone et al., 2011).

Research shows that platform preferences vary considerably by age and gender. TikTok, for example, has become one of the most popular platforms for younger adolescents due to its short-form video content and interactive features (Auxier & Anderson, 2021). Studies by Montag et al. (2021) highlight that platforms like TikTok encourage creative expression and rapid content consumption, making them especially appealing to younger users. Among the social media sites that are very popular among students in Malaysia are TikTok, Instagram, WhatsApp and YouTube (Shaari & Kamaluddin, 2019).

WhatsApp serves as a more functional tool, widely used for instant messaging and group communication (Church & de Oliveira, 2013). Its popularity tends to be more balanced across gender and age groups, as evidenced in various cross-cultural studies (Bouhnik & Deshen, 2014). Instagram also plays a significant role, particularly among female students, who are drawn to its visual culture and capacity for self-presentation (Sheldon & Bryant, 2016). The platform's emphasis on curated images and lifestyle sharing has been linked to both positive social engagement and negative impacts on self-esteem (Fardouly & Vartanian, 2016).

The use of other platforms, such as YouTube, Discord, Reddit, and Telegram, illustrates how students create multi-platform ecosystems to meet diverse needs (Jenkins, 2009). YouTube remains the dominant source of educational content and entertainment (Khan, 2017). Platforms like Reddit and Telegram cater to students seeking discussion-based interaction or private, secure communication (Pentina et al., 2018). The continuing, albeit declining, use of Facebook by some students suggests its lingering value for family connections or institutional communications (Valkenburg et al., 2017).

Age is a critical factor influencing the diversification and sophistication of social media use. Younger adolescents (ages 13-14) typically begin their social media journey with messaging platforms and video consumption (Rideout et al., 2022). As students grow older, they tend to expand their presence to multiple platforms and adopt more strategic uses of social media. For instance, Livingstone and Helsper (2007) observed that older adolescents often display greater digital literacy, enabling them to navigate various platforms for information, entertainment, and social interaction. The increasing use of "other" platforms such as Discord, Reddit, and Telegram among older students reflects this trend of exploration and specialisation.

Gender has been shown to influence social media behaviours significantly. Numerous studies (e.g., Anderson & Jiang, 2018; Rideout et al., 2022) report that female students are more active on platforms that support social interaction and visual sharing (e.g., TikTok, Instagram), while male students are more likely to engage with gaming-oriented platforms (e.g., Discord) and interest-based communities. Mazman & Usluel (2011) found that female students tend to use social media for relationship maintenance and communication, whereas male students use it more frequently for information-seeking and entertainment.

Given the ubiquity of social media in students' lives, there is increasing empha-

sis on fostering digital literacy (Mustapha et al., 2023) and responsible online behaviour (Livingstone et al., 2011). Educators and parents must understand students' platform preferences and usage patterns to promote positive online experiences and address potential challenges, such as cyberbullying (Hassan & Isa, 2024), privacy concerns, and addiction (Best et al., 2014; O'Keeffe & Clarke-Pearson, 2011). Recognising students' multi-platform behaviour enables more effective integration of social media into learning environments, while also preparing students to be critical and ethical digital citizens (Moha et al., 2023). This study aims to investigate the patterns of social media account ownership and platform usage among secondary school students, with a particular focus on age-related trends, gender differences, and the emergence of multi-platform engagement.

3. Methodology

This research employed quantitative methods to explore various aspects of the student context of social media engagement. Crosstab analysis, also known as cross-tabulation, was the primary analytical technique used. Crosstab analysis is a widely accepted method for exploring the distribution and relationships between categorical variables (Field, 2013). It facilitates researchers to systematically examine how respondents' behaviours or preferences differ across distinct demographic groups, such as age and gender. Given the categorical nature of the variables in this study (e.g., content types and demographic groups), crosstab analysis was deemed both appropriate and methodologically sound.

As the primary objective was to describe engagement patterns rather than to test statistical significance, crosstab analysis was selected as the most effective and interpretable method for this purpose without conducting inferential statistical tests. This approach aligns with best practices in educational and social research, where descriptive statistics are often employed to explore foundational questions before advancing to more inferential approaches (Creswell & Creswell, 2018).

A total of 373 students from Forms 1 to 5 in secondary schools in Kuala Lumpur, Malaysia, participated in the study. Using the table of sampling error of 5% with a 95% confidence level from Krejcie and Morgan (1970), the total number of students is determined. Cluster random sampling was employed to select participants. This method allowed for efficient data collection while maintaining diversity within the sample. Data were gathered using a structured questionnaire and analysed using quantitative descriptive methods via the Statistical Package for the Social Sciences (SPSS) Version 27.

To encourage accurate self-reporting of the number of social media accounts owned, several measures were implemented. First, anonymity and confidentiality were assured to all participants, with clear communication that individual responses would not be traced or disclosed. This approach aimed to minimize social desirability bias and foster honest reporting. Second, the questionnaire was designed with clear and straightforward instructions, accompanied by specific ex-

amples of popular platforms (e.g., Facebook, Instagram, TikTok) to help students accurately identify and report the social media accounts they actively use. Third, participation in the study was entirely voluntary, and students were explicitly informed that there were no right or wrong answers. This helped create a non-threatening environment conducive to genuine responses.

4. Findings

4.1. Demographic Profile

Table 1 presents the distribution of participants by gender. A total of 373 students participated in the study. The sample consisted of 227 female and 146 male students, resulting in a female-majority sample (60.9%).

Table 1. Gender distribution.

Category	Group	Frequency (n)	Percentage (%)
Gender	Male	146	39.10
	Female	227	60.90
Total		373	100

Table 2 presents the distribution of participants by age. The age of respondents ranges from 13 to 17 years, corresponding with the conventional age range for lower and upper secondary school students in Malaysia.

Table 2. Age distribution.

Category	Group	Frequency (n)	Percentage (%)
Age	13	21	5.60
	14	35	9.40
	15	101	27.10
	16	89	23.90
	17	127	34.00
Total		373	100

Students aged 15 to 17 constituted the majority of respondents (84.9%), suggesting that social media engagement is most prevalent during mid-to-late adolescence. This developmental stage is particularly significant for character formation, as it aligns with heightened digital exposure and the intensification of identity development processes.

4.2. Number of Social Media Accounts Owned by Students

The general trends in **Table 3** indicate that the largest group overall consists of

respondents with two accounts (31.37%), followed by those with more than three accounts (28.15%). 23.32% of respondents own only one account, while 17.16% have three accounts.

Table 3. Number of social media accounts owned by students by gender.

No. of Accounts	Male		Female		Overall	
	(n = 145)	Percentage (%)	(n = 228)	Percentage (%)	(n = 373)	Percentage (%)
1 account	36	9.65	51	13.67	87	23.32
2 accounts	50	13.40	67	17.96	117	31.37
3 accounts	21	5.63	43	11.53	64	17.16
More than 3	38	10.19	67	17.96	105	28.15
	145	38.87	228	61.13	373	100

Across all categories, female respondents tend to hold more accounts than males in absolute numbers, due to their larger representation (61.13% of the sample). Female respondents exhibit proportionally higher engagement across multi-account categories compared to their male counterparts. Specifically, 17.96% of females reported maintaining more than three accounts, compared to 10.19% of males. Similarly, 11.53% of females reported having three accounts, in contrast to 5.63% of males; 17.96% of females reported two accounts versus 13.40% of males; and 13.67% of females reported maintaining a single account, compared to 9.65% of males.

The most significant gender difference is observed in the “More than three accounts” category, where females nearly double the percentage of males (17.96% vs. 10.19%). Females also exhibit a higher proportion of ownership across all categories, suggesting a general tendency towards greater multi-account engagement compared to males. The findings suggest that female users are more inclined to diversify their account holdings than male users.

This analysis reveals a notable gender disparity in account ownership patterns, with female respondents consistently showing higher rates of multi-account usage. The dominance of two accounts and more than three account categories suggests an increasing trend toward multiple account usage in the overall population.

The report in **Table 4** presents the number of social media accounts owned by students across five age groups: 13, 14, 15, 16, and 17 years old, based on a sample of 373 respondents. The aim is to identify trends in social media account ownership relative to age and to understand how account ownership increases with age and digital exposure.

Generally, the most common category is two accounts (31.37%), followed by more than three accounts (28.15%). The least common is three accounts (17.16%), though still substantial.

Table 4. Number of social media platforms owned by students by age.

Age	Number of Social Media Accounts owned by students			
	1	2	3	More than three accounts
13 (n = 21)	1.88 %	1.34 %	1.34 %	1.07%
14 (n = 35)	3.22%	1.88%	1.07%	3.22%
15 (n = 101)	5.36%	8.31%	4.83%	8.58%
16 (n = 89)	6.17%	8.85%	4.02%	4.83%
17 (n = 127)	6.70%	10.99%	5.90%	10.46%
Total (n = 373)	23.32%	31.37%	17.16%	28.15%

Age-wise observations, age 13, very low overall engagement. Ownership is relatively balanced across categories, with each under 2%. Indicates early-stage exposure to social media, with restrictions possibly influencing usage. At age 14, there is a slight increase in total engagement compared to age 13. Notable rise in >3 accounts (3.22%), suggesting a segment is more actively exploring platforms. Reflects a transitional stage of social media exploration. At age 15, there is a sharp rise across all categories, particularly in categories 2 (8.31%) and those with more than three accounts (8.58%). Students become more independent in their digital lives at this stage. Likely to use social media for both personal and educational and social engagement.

At age 16, the highest percentage is in two accounts (8.85%). A dip in more than three accounts (4.83%) compared to age 15 suggests consolidation or selective use of platforms. This may reflect a maturing approach to online presence. At age 17, the highest engagement is observed across the board, especially in two accounts (10.99%) and more than three accounts (10.46%), indicating peak diversification in social media usage, likely for academic, social, and possibly pre-professional purposes.

Developmental interpretation-wise, there is a progressive increase in account ownership with age. The most notable growth occurs between the ages of 14 and 17, reflecting an increase in autonomy, peer influence, and digital competence. The data support the idea that older students tend to diversify their online presence, potentially managing multiple identities (e.g., personal, school-related, interest-based). The analysis reveals a positive relationship between age and the number of social media accounts an individual owns. At the age of 17, students exhibit the highest level of account ownership across all categories, indicating advanced engagement with digital platforms.

A significant developmental trend exists in how students interact with social media. The transition from minimal to multi-account ownership intensifies between the ages of 14 and 17. This trend may influence areas such as digital literacy education, cybersecurity awareness, and platform-specific outreach strategies.

4.3. Social Media Platforms Preference

Table 5 reports the primary usage of social media platforms among male and female students within a sample of 373 respondents (146 males and 227 females). Analysis found that, overall, TikTok is the most popular platform (40.48%), followed by WhatsApp (31.10%) and Instagram (22.79%). X has almost no usage among students (0.27% overall). Other platforms make up a small portion of usage (5.36%).

Table 5. Main social media platforms used by students by gender.

Social Media Platforms	Male		Female		Overall	
	(n = 146)	Percentage (%)	(n = 227)	Percentage (%)	(n = 373)	Percentage (%)
TikTok	47	12.60	104	27.88	151	40.48
Instagram	26	6.97	59	15.82	85	22.79
X	1	0.27	0	0.00	1	0.27
WhatsApp	57	15.28	59	15.82	116	31.10
Others	14	4.02	6	1.34	20	5.36
	146	39.14	227	60.86	373	100

Gender-wise trends indicate that female TikTok users have a significantly stronger preference for the platform (27.88%) compared to males (12.60%). TikTok is the dominant platform for female students, with over a quarter of them choosing it as their primary social media platform. This suggests that TikTok's content style and community appeal are more strongly aligned with female users in this demographic.

Instagram has a similar gender pattern to TikTok, although it is less pronounced. Female students (15.82%) are more likely to use Instagram than males (6.97%). Instagram also leans toward female usage, though it is less dominant compared to TikTok. X (formerly Twitter) has extremely low usage among both genders. Only one male student (0.27%) reported using X. This suggests X is largely irrelevant to the student demographic surveyed.

WhatsApp, balanced usage across genders, with males (15.28%) and females (15.82%). Indicates WhatsApp serves as a universal communication tool across both groups, likely driven by its functional rather than entertainment-based use. On other platforms, males (4.02%) show a greater tendency to use these platforms compared to females (1.34%). This may indicate that male students are more frequently exploring or using less mainstream or niche platforms than females.

Interpretations are that female students are generally more active on visually and content-driven platforms such as TikTok and Instagram. Male students show a slightly more diversified profile, with higher representation in "Other platforms" and WhatsApp. WhatsApp's balanced usage highlights its cross-functional value

for both genders, likely used for academic, personal, and group communications. X's minimal usage suggests it holds very little relevance for students today, consistent with trends showing younger users moving away from text-centric platforms.

The observation suggests that gender has a strong influence on platform preference among students. Female students dominate in their use of TikTok and Instagram, demonstrating significantly higher levels of engagement on these platforms. In contrast, WhatsApp shows a more balanced usage pattern across both genders. In terms of platform relevance, TikTok and WhatsApp emerge as the core platforms within the students' social media ecosystems, serving as primary channels for both communication and content consumption. Instagram plays a supporting role, gaining popularity, particularly among older students, but it does not surpass TikTok or WhatsApp in overall usage. Meanwhile, platform X (formerly Twitter) appears to be largely irrelevant to the current student cohort, with minimal reported usage.

Table 6 presents an analysis of the leading social media platforms used by students, categorised by age groups: 13, 14, 15, 16, and 17 years old. The goal is to identify trends and patterns in platform preferences as students' progress through age cohorts, based on a sample of 373 students. Overall, TikTok is the most popular platform (40.48%), followed by WhatsApp (31.10%), Instagram (22.79%), and Others (5.36%). X (formerly Twitter) exhibits negligible usage (0.27%), primarily among the 16-year-old group.

Table 6. Main social media platforms used by students by age.

Age	Social Media Platforms Used by Students by Age				
	TikTok (%)	Instagram (%)	X (%)	WhatsApp (%)	Others (%)
13 (n = 21)	2.68	0.80	0.00	1.61	0.54
14 (n = 35)	3.49	2.14	0.00	2.95	0.80
15 (n = 101)	12.06	6.17	0.00	7.77	1.07
16 (n = 89)	8.31	5.09	0.27	9.65	0.54
17 (n = 127)	13.94	8.58	0.00	9.12	2.41
total (n = 373)	40.48	22.79	0.27	31.10	5.36

Age-wise trends indicate that engagement is very low at age 13 across all platforms. TikTok (2.68%) and WhatsApp (1.61%) are the most used. Instagram and other platforms are barely used. This reflects early-stage adoption of social media, likely influenced by parental restrictions and less online autonomy. At the age of 14, there is a slight increase in usage compared to the age of 13. TikTok (3.49%) remains the most used platform. WhatsApp usage increases slightly (2.95%). Instagram starts to gain traction (2.14%). The pattern suggests gradual exploration

of social platforms at this stage.

At age 15, a marked increase in platform usage. TikTok (12.06%) and WhatsApp (7.77%) see substantial growth. Instagram usage also increases (6.17%). This age marks a transition phase, where students begin to engage more actively on social platforms. At age 16, High engagement was sustained across all platforms. WhatsApp reaches its peak usage here (9.65%), making it the most used platform among 16-year-olds. TikTok remains popular (8.31%). Instagram usage (5.09%) and a slight presence of X (0.27%) suggest diversification of platforms. Students at this stage are likely to be balancing their communication needs with content consumption.

At age 17, peak usage across most platforms. TikTok (13.94%) is the leading platform, followed by WhatsApp (9.12%) and Instagram (8.58%). Other platforms see their highest usage at this age (2.41%). This pattern suggests that older students are the most digitally engaged and diversified in their platform use.

TikTok remains widely popular across all age groups, with a significant surge in usage observed, particularly among 15- and 17-year-olds, establishing it as the leading platform among older students. This trend highlights the platform's strong attraction due to its short-form video and entertainment content, which resonates well with young users. Instagram shows a steady rise in use as age increases, reaching its highest point at age 17 (8.58%), suggesting it is perceived as a more mature and socially engaging platform compared to TikTok. In contrast, X (formerly Twitter) has minimal usage, with only one recorded user (0.27%) among 16-year-olds, reflecting the low interest in text-based social media platforms among today's student demographic.

WhatsApp is used steadily across all age groups. Peaks at age 16 (9.65%). Represents a functional communication tool rather than a content-driven platform, showing consistent utility across the student lifecycle. Other platforms have low usage overall, but usage increases with age. Highest among 17-year-olds (2.41%), suggesting that older students are beginning to explore niche or emerging platforms.

Younger students (ages 13-14) exhibit limited and cautious engagement. From the age of 15 onwards, there is a marked increase in usage, particularly on TikTok and WhatsApp. By age 17, students exhibit the widest and most mature usage profile, engaging across a variety of platforms. The data reflects the typical digital socialisation trajectory, where platform use intensifies and diversifies with age.

The analysis reveals clear age-based trends in social media platform use: TikTok and WhatsApp dominate student usage overall. Instagram gains popularity steadily with age. X is largely irrelevant to the student demographic. Older students are more likely to experiment with other platforms, showing increased digital literacy and curiosity.

Table 7 illustrates the use of alternative or less mainstream social media platforms among students. The data are based on a subset of 26 students (n = 26) who reported using additional social media platforms beyond TikTok, Instagram, X,

or WhatsApp. The objective is to explore the diversity of digital engagement and identify emerging trends in students' social media preferences beyond the dominant platforms.

Table 7. Additional social media platforms used by students.

Additional Social Media Platforms	Overall	
	(n = 26)	Percentage (%)
YouTube	13	50.00
Discord	5	19.23
Facebook	2	7.69
Telegram	2	7.69
Pinterest	1	3.85
Reddit	1	3.85
Snapchat	1	3.85
Threads	1	3.85
	26	100

Overall platform popularity, YouTube is by far the most popular “other” platform, used by 50% of respondents in this category. Discord follows at a distant second with 19.23%. Facebook and Telegram are each used by 7.69% of students. The remaining platforms (Pinterest, Reddit, Snapchat, Threads) have minor but equal representation at 3.85% each.

With 7.69% usage, reflecting the declining popularity of Facebook among younger demographics. Telegram (7.69%) is popular for private, secure, or group-based messaging. Usage suggests that a segment of students is seeking alternative communication tools. Pinterest, Reddit, Snapchat, and Threads (each with a 3.85% share) represent individual niche interests: the diversity of usage, with the presence of eight different platforms among just 26 users, indicates a high degree of platform diversity. Suggests that while students may concentrate their time on major platforms (TikTok, Instagram, WhatsApp), many also supplement their digital lives with specialised or interest-based platforms.

The study shows that video and community-driven platforms (YouTube, Discord) are key among secondary platforms. Emerging platforms (Threads) are starting to gain limited traction. Traditional social media giants like Facebook are losing ground but maintain niche utility. Students are increasingly building a multi-platform digital ecosystem, utilising various platforms for different purposes, including content consumption, community interaction, messaging, creativity, and information sharing. The analysis of “additional” social media platform usage reveals that students exhibit a strong preference for video content (YouTube) and a growing interest in community and interest-based platforms (Discord, Reddit), a trend

toward using specialised platforms to meet specific needs or interests. This reflects a shift from monolithic platform use (utilising one or two dominant apps) toward a more diverse, purpose-driven digital engagement model.

5. Discussion

The findings of this study align with existing literature suggesting that students engage with multiple social media platforms simultaneously, often using each platform for distinct purposes (Jenkins, 2009; Anderson & Jiang, 2018). The results show that while mainstream platforms like TikTok, Instagram, and WhatsApp dominate, a significant portion of students also use “other” platforms such as YouTube and Discord, consistent with the growing trend toward diversified platform use (Rideout et al., 2022; Shaari & Kamaluddin, 2019).

The high popularity of TikTok (40.48%) among students, especially in older age groups, confirms previous findings that short-form video content is highly engaging and influential for adolescent users (Montag et al., 2021). This suggests that TikTok has successfully tapped into the creative and entertainment needs of students, serving as both a leisure activity and a space for peer interaction. Conversely, WhatsApp’s sustained usage across all age groups reinforces its role as a functional communication platform (Bouhnik & Deshen, 2014), supporting the idea that students use it primarily for personal messaging and group-based communication.

The study reveals clear age-related patterns in social media use, aligning with the developmental models presented by Livingstone and Helsper (2007). Younger adolescents (ages 13-14) exhibited lower engagement across platforms, reflecting early-stage digital literacy and perhaps parental restrictions (Rideout et al., 2022). As students’ progress in age, they exhibit increasing diversification and intensity of platform use. Specifically, 15-16-year-olds show significant growth in their use of TikTok and Instagram. Moreover, 17-year-olds exhibit the widest engagement across both mainstream and “other” platforms. This pattern suggests that as students mature digitally, they actively explore and manage multiple online identities (Jenkins, 2009), utilising different platforms to meet their evolving social, educational, and entertainment needs.

The findings also corroborate existing research on gendered patterns of social media use (Mazman & Usluel, 2011; Sheldon & Bryant, 2016). In this study, female students were more likely to use TikTok (27.88%) and Instagram (15.82%), consistent with the study highlighting female preferences for visual-based and social-sharing platforms (Fardouly & Vartanian, 2016). Male students showed a relatively higher inclination toward functional platforms such as WhatsApp (15.28%) and “other platforms” (4.02%), including Discord and YouTube, in line with studies suggesting that males often use social media for information-seeking and entertainment (Mazman & Usluel, 2011).

The study’s exploration of “additional” platforms further highlights the trend toward platform diversification, like YouTube (50%), which remains a central

space for educational content and entertainment, confirming previous research (Khan, 2017). Platforms like Reddit, Telegram, Pinterest, Snapchat, Discord and Threads, though used by smaller groups, illustrate the niche interests and individualised digital behaviours that characterise contemporary adolescent social media use (Pentina et al., 2018). These findings support the notion that students are strategic and selective in their platform choices, constructing personalised digital ecosystems (Jenkins, 2009) that cater to both social connection and personal interests.

6. Limitation of the Study and Future Research

This study acknowledges several limitations that should be considered when interpreting the findings. The sampling method and the sample size of 373 respondents, while meaningful, may limit the generalizability of the results to the broader secondary school student population. In addition, it should be noted that the use of a single-state, cluster-based sample also limits the generalizability of the findings to other geographical or demographic contexts. Therefore, while the study offers meaningful insights into the behaviours and experiences of secondary school students in Kuala Lumpur, caution is advised in extending these findings to broader populations. Despite this limitation, the study offers valuable insights and can serve as a useful reference for future research on social media engagement among secondary school students. To enhance the robustness and applicability of future studies, it is recommended that larger and more diverse samples be employed, along with more rigorous probability-based sampling techniques.

In addition, crosstabulation analysis was used in this study as a descriptive tool to explore patterns of social media engagement across demographic categories such as age and gender. The objective was to identify and illustrate distribution patterns rather than to test specific hypotheses or infer population-level relationships. Although Chi-square tests are often used alongside crosstabs to examine statistical significance, they were not applied in this study as it was not designed to test for statistically significant associations. Nonetheless, future research may benefit from incorporating Chi-square tests or other inferential methods, particularly when the goal is to examine the strength or independence of associations between categorical variables. Such approaches would enable more generalizable and statistically robust conclusions.

To gain deeper insights, future studies should include in-depth qualitative approaches, such as interviews or focus groups, to explore students' perceptions, motivations, and cross-platform behaviours. It is also recommended that future research investigate the relationship between social media engagement and students' academic outcomes, mental well-being, and social relationships to understand better both the opportunities and risks associated with extensive social media use among secondary school students.

7. Conclusion and Recommendation

This study offers valuable insights into the patterns of social media use among

secondary school students, highlighting variations by age and gender, as well as the growing trend toward multi-platform digital engagement. An apparent gender disparity was observed in account ownership patterns, with female students consistently exhibiting higher rates of multi-account usage. Additionally, a positive age-based trend emerged: as students grow older, they tend to maintain more social media accounts. The shift from minimal to multi-account ownership between the ages of 14 and 17 reflects an increasing digital maturity, which has important implications for digital literacy and cybersecurity education.

In terms of platform preferences, TikTok and WhatsApp dominate student usage across all age groups, while Instagram steadily gains popularity as students age. The platform X (formerly Twitter) appears irrelevant primarily to this demographic. Older students demonstrate greater willingness to explore diverse platforms, such as YouTube, Discord, and Reddit, indicating not only increased digital curiosity but also a shift toward purpose-driven digital engagement. This suggests a move away from reliance on one or two dominant apps toward more specialised and personalised digital ecosystems.

The analysis of “additional” platform uses highlights students’ strong preference for video content and interest-based online communities. This evolving behaviour aligns with broader trends in social media use, where users select platforms based on various needs and interaction.

Overall, the findings highlight that students today are active and strategic users of social media, navigating multiple platforms to achieve diverse personal and social objectives. These insights call for educational interventions that move beyond basic digital skills, focusing instead on promoting critical thinking, safe and responsible platform use, and the development of positive online identities. Additionally, gender-sensitive and age-appropriate approaches to digital literacy will be crucial in supporting students as they navigate the increasingly complex social media landscape.

Based on the findings of this study, several key recommendations can be made for schools, parents, educators, and content creators. First, both schools and parents should be aware of the rising trend in multi-account ownership among students as they grow older and should actively support and guide them toward responsible account management. Open communication about privacy, security, and ethical online behaviour is essential as students’ digital engagement becomes more complex.

Digital literacy programs should be carefully tailored to different age groups with adequate infrastructure, as suggested by [Mustapha et al. \(2023\)](#). For younger students, the focus should be on safe and responsible exploration of digital spaces, helping them develop a healthy understanding of online risks and positive behaviours. For older students, educational efforts should address more advanced topics such as privacy protection, content curation, platform management, and the complexities of maintaining multiple online identities.

Given the dominant role of TikTok and WhatsApp in students’ social media

use, particularly from age 15 onwards, educators and content creators should prioritise these platforms for educational campaigns and outreach efforts. Additionally, gender-sensitive strategies should be developed, as the study found that platforms such as TikTok and Instagram attract higher engagement from females. Meanwhile, the growing use of YouTube and Discord among older students suggests that these platforms should also be leveraged to support interest-based learning and community-driven educational initiatives.

It is also recommended that schools and educators continuously monitor the use of emerging platforms, such as Discord and Reddit, as well as other niche platforms, to remain responsive to shifting trends and anticipate new opportunities or risks associated with these digital spaces. Ultimately, across all educational and outreach efforts, it is essential to foster critical thinking, promote positive digital participation, and cultivate a strong sense of digital citizenship, ensuring that students are well-equipped to navigate the increasingly complex and evolving digital landscape.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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