

## DIGITAL CITIZENSHIP UNDERSTANDING AS A PREDICTOR OF STUDENTS' ETHICAL BEHAVIOR ON TIKTOK : EVIDENCE FROM INDONESIAN MADRASAH STUDENTS

Ardira Bunga Pramesty<sup>1a\*</sup>, Budi Mulyono<sup>2b</sup>, Mukhamad Murdiono<sup>3c</sup>, Dika Yumanda<sup>4d</sup>

<sup>123</sup>Civic Education, Graduate School, Universitas Negeri Yogyakarta, Yogyakarta, Indonesia

<sup>4</sup>MAN 1 Way Kanan, Ministry of Religious Affairs, Republic of Indonesia, Lampung, Indonesia

<sup>a</sup> [ardirabunga.2024@student.uny.ac.id](mailto:ardirabunga.2024@student.uny.ac.id)

<sup>b</sup> [budi.mulyono@uny.ac.id](mailto:budi.mulyono@uny.ac.id)

<sup>c</sup> [mukhamad\\_murdiono@uny.ac.id](mailto:mukhamad_murdiono@uny.ac.id)

<sup>d</sup> [dikayumanda82@gmail.com](mailto:dikayumanda82@gmail.com)

(\*) Corresponding Author

[ardirabunga.2024@student.uny.ac.id](mailto:ardirabunga.2024@student.uny.ac.id)

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### ABSTRACT

The widespread use of TikTok among adolescents has raised growing concerns regarding ethical behavior in digital environments. This study examines the relationship between students' understanding of digital citizenship and their ethical behavior in using TikTok. Employing a quantitative correlational design, the study involved 66 Grade XII students from an Indonesian madrasah selected through total sampling. Data were collected using Likert-scale questionnaires based on Ribble's digital citizenship framework and Martin et al.'s ethical behavior model. Due to non-normal data distribution, the Spearman Rank correlation test was applied. The findings reveal a strong and positive relationship between digital citizenship understanding and ethical behavior ( $\rho = 0.775$ ,  $p < 0.05$ ), indicating that higher levels of digital citizenship comprehension are associated with more ethical TikTok use. Digital citizenship understanding accounted for approximately 60% of the variance in students' ethical behavior, while the remaining variance was influenced by other contextual factors. These results highlight the critical role of digital citizenship education in fostering responsible and ethical social media behavior among adolescents. This study contributes empirical evidence to digital citizenship research in the Indonesian madrasah context and provides practical implications for integrating digital ethics into civic education curricula.

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### INTRODUCTIONS

Digital technology advancement has transformed social interaction patterns among students. Social media platforms such as TikTok have evolved beyond entertainment into digital public spaces where adolescents communicate, construct identities, and negotiate social norms (Choi, 2016; Richardson et al., 2021). Based on data from the Indonesian Internet Service Providers Association (APJII), 79.5% of Indonesian teenagers aged 13-18 actively use social media, with TikTok being one of the most widely accessed platforms. Nevertheless, widespread use among adolescents has raised concerns

regarding digital behavior, including misinformation circulation, hate speech, cyberbullying, and privacy violations (Harrison & Polizzi, 2022; Neumann & Rhodes, 2024). These issues reflect a gap between adolescents' technical proficiency in using digital platforms and their understanding of ethical norms and civic responsibility in online environments.

Law Number 20 of 2003 on the National Education System states that national education aims to develop citizens with noble character, responsibility, and relevant life skills. However, many students struggle to demonstrate ethical conduct in digital environments. Cases indicate students frequently engage in inappropriate behavior on social media, such as sharing content that provokes ethnic, religious, racial, and group (SARA) issues, cyberbullying, using offensive language, and distributing unverified information. Nugroho et al. (2023) reveal that TikTok usage significantly affects student behavior both positively and negatively. This discrepancy between ideals (*das sollen*) and reality (*das sein*) underscores the importance of strengthening students' understanding of digital citizenship as a moral foundation for their interactions in digital spaces.

Unethical behavior on social media reflects students' weak understanding of digital citizenship. Digital citizenship is the ability to use technology responsibly, ethically, safely, and participatively in digital communities (Ribble, 2015; Choi, 2016). This concept encompasses citizens' capacity to participate in online society responsibly and ethically (Jones & Mitchell, 2016; Chen et al., 2021). Ribble (2015) explained that digital citizenship consists of nine elements grouped into three categories: respect (for oneself and others), educate (oneself and others), and protect (oneself and others). When students lack adequate understanding of these principles, they tend to behave impulsively without considering moral and social consequences of their digital actions. Yao et al. (2023) found that problematic TikTok use is associated with high levels of depression and social anxiety among adolescents, indicating that without proper understanding and self-control, social media use negatively impacts students' psychological well-being.

This research is grounded in several arguments. First, theoretically, research on the relationship between digital citizenship understanding and ethical behavior on TikTok, especially in Indonesian madrasah environments, remains very limited. Most previous research focused on general digital literacy or other platforms like Facebook and Instagram (Richardson et al., 2021; Shi et al., 2023). TikTok has unique characteristics with different algorithms, short video content formats, and distinctive interaction culture, requiring separate study. Second, practically, findings can provide empirical basis for developing more effective Pancasila and Citizenship Education (PPKn) learning strategies integrating digital citizenship education (Kim & Choi, 2018; Capuno et al., 2022). Third, from policy perspective, results can inform education policymakers in designing curricula and programs more responsive to digital era challenges. Fourth, given madrasah students' strong context of religious values, this study can explore how integration between Islamic values, Pancasila, and digital citizenship principles shapes students' ethical behavior on social media.

Various studies have shown relationships between digital literacy, digital citizenship, and online behavior. Choi et al. (2017) developed a reliable and valid digital citizenship scale, finding that individuals with high digital citizenship levels tend to exhibit more responsible and ethical online behavior. Richardson et al. (2021) in a systematic review of 15 years of digital citizenship research (2004-2019) found that digital citizenship education effectively improves students' ethical behavior and social responsibility across educational contexts. Chen et al. (2021) emphasized that digital citizenship is a multidimensional concept including cognitive, technical, and social aspects that interact in shaping digital behavior. However, these studies were generally conducted in Western contexts with different cultures, necessitating research exploring the same phenomenon in Indonesian context, especially in madrasah environments with unique characteristics.

In Indonesian context, several studies have begun examining digital citizenship, but few specifically examine its relationship with ethical behavior on TikTok. Saidi et al. (2022) found that digital literacy and citizenship literacy affect vocational high school students' personal resilience levels, indicating that digital citizenship understanding contributes to character formation. Saputra (2022) shows that digital citizenship integration in civics education courses fosters internet ethics (*netiquette*) among students. While these studies make important contributions, research gaps remain regarding how digital citizenship understanding relates to students' ethical behavior in TikTok use context, which is very popular among teenagers today.

Studies on TikTok and its impact on students show alarming results. Regasa et al. (2023) in their literature review found that TikTok has complex impacts on students, covering academic, social, and psychological aspects. Aufa (2024) in

a case study at MAN Purwakarta found that TikTok affects high school students' moral behavior, where students spending much time on TikTok tend to show declining moral behaviors such as politeness and empathy. Wang and Shang (2024) found that social and parasocial relationships on TikTok impact student well-being, with mediating roles from algorithm awareness and compulsive use. These findings show the urgency of understanding factors that can protect students from TikTok's negative impact, one being digital citizenship understanding that can serve as a protective factor.

Ethical behavior on social media is closely related to individuals' moral awareness in online interactions. Martin et al. (2018) developed a theoretical framework for ethical behavior including three main dimensions: Moral Awareness, Accountability, and Empathy. Moral awareness refers to individuals' ability to recognize situations containing ethical dimensions and understand moral consequences of their actions. Accountability relates to individuals' willingness to take responsibility for their actions in digital space, not blame others, and accept consequences. Empathy is the ability to understand and feel others' experiences in digital interactions, encouraging more caring and respectful behaviors. Harrison and Polizzi (2022) found that adolescents often face complex moral dilemmas when making online decisions, and effective education must equip them with moral frameworks for ethical decisions. In Indonesian context, discussions about digital ethics have begun developing considering local values context (Wahyudin & Karimah, 2016; Praptiningsih, 2017), though empirical research testing how digital citizenship understanding integrated with local values relates to students' ethical behavior on social media, especially TikTok, remains limited.

Based on the outlined phenomenon and research gap, this study aims to investigate the relationship between students' understanding of digital citizenship and their ethical behavior when using TikTok at MAN 1 Way Kanan. Specifically, this study examines students' comprehension of five digital citizenship dimensions: Digital Etiquette, Digital Literacy, Digital Law, Digital Rights and Responsibilities, and Digital Security (Ribble, 2015), and evaluates their ethical conduct through three dimensions: Moral Awareness, Accountability, and Empathy (Martin et al., 2018). This research is expected to provide empirical contributions to digital citizenship theory development in Indonesian context and offer practical implications for PPKn learning improvement in the digital era, particularly in shaping students who are not only technologically competent but also uphold moral integrity and social responsibility as digital citizens. The novelty of this research lies in its focus on TikTok as a platform with unique characteristics compared to other social media within the specific context of Indonesian madrasah education, where integration of Islamic values, Pancasila, and universal digital citizenship principles creates a distinctive and contextually meaningful approach.

## METHOD

This study employed a quantitative correlational design to examine the association between students' digital citizenship understanding (variable X) and their ethical behavior in TikTok use (variable Y). The correlational design was applied since the study observed both variables in their natural state and examined the extent to which they are related (Sugiyono, 2022). The study was conducted at Madrasah Aliyah Negeri (MAN) 1 Way Kanan in Lampung, Indonesia, over two months from October to November 2024.

The population comprised all grade XII students at MAN 1 Way Kanan totaling 66 students. Grade XII students were selected based on consideration that they have longer experience using social media and have received more comprehensive PPKn learning. The entire population was used as research sample using saturated sampling technique, appropriate when population is relatively small (less than 100 people) (Sugiyono, 2022).

Data collection used closed questionnaires with four-point Likert scale: (1) Strongly Disagree, (2) Disagree, (3) Agree, and (4) Strongly Agree. The digital citizenship understanding variable (X) was developed based on Ribble's theory (2015) including five indicators: Digital Etiquette, Digital Literacy, Digital Law, Digital Rights and Responsibilities, and Digital Security, elaborated into 20 statement items. The ethical behavior variable (Y) was developed based on Martin et al.'s theory (2018) including three indicators: Moral Awareness, Accountability, and Empathy, elaborated into 12 statement items. Instrument validity was assessed using Pearson's Product Moment correlation ( $r$  criterion  $> 0.361$  for  $n=30$ ), with all items declared valid. Reliability was confirmed through Cronbach's alpha coefficients showing values of 0.891 for variable X and 0.854 for variable Y, indicating strong internal consistency.

Data collection was conducted through Google Forms distribution to all grade XII students at MAN 1 Way Kanan with PPKn teachers' assistance. Before completing the questionnaire, researchers provided explanation of research purpose,

guaranteed respondent identity confidentiality, and provided clear instructions. Students were given approximately 20-25 minutes to complete the questionnaire. Ethical considerations were maintained through informed consent procedures, ensuring voluntary participation and data confidentiality.

Data analysis consisted of descriptive analysis (calculating mean, median, mode, standard deviation, highest score, lowest score, and score range) and inferential analysis. Data were categorized into three categories: high if score  $> (\text{mean} + \text{standard deviation})$ , medium if score between  $(\text{mean} - \text{standard deviation})$  to  $(\text{mean} + \text{standard deviation})$ , and low if score  $< (\text{mean} - \text{standard deviation})$ . Inferential analysis began with normality test using Kolmogorov-Smirnov. Since data were not normally distributed (Sig.  $< 0.05$ ), hypothesis testing used Spearman Rank correlation test. Correlation coefficient interpretation used Sugiyono's (2022) classification: 0.00-0.19 (very low), 0.20-0.39 (low), 0.40-0.59 (moderate), 0.60-0.79 (strong), and 0.80-1.00 (very strong). Significance testing used 5% level ( $\alpha = 0.05$ ). All analyses were conducted using SPSS version 25.

The study hypotheses were:  $H_0$  (Null Hypothesis): There is no significant relationship between understanding digital citizenship and students' ethical behavior in TikTok use.  $H_a$  (Alternative Hypothesis): There is a positive and significant relationship between understanding digital citizenship and students' ethical behavior in TikTok use. Hypothesis testing criterion: if significance value (Sig. 2-tailed)  $< 0.05$ , then  $H_0$  is rejected and  $H_a$  is accepted.

## RESULT AND DISCUSSION

### Results

This study involved 66 students in grade XII of MAN 1 Way Kanan as respondents. Data were collected using a questionnaire with a total of 32 statement items consisting of 20 items for the digital citizenship understanding variable (X) and 12 items for the student ethical behavior variable (Y). All respondents filled out the questionnaire completely and the data collected were eligible for further analysis. The following are presented the results of descriptive and inferential analysis of the data that has been collected.

#### Digital Citizenship Understanding (Variabel X)

Digital citizenship comprehension data that has been collected from 66 respondents with 20 valid statement items shows the following results: highest score of 80, lowest score of 48, range of 32, average of 67.42, median 68.5, mode 80, and standard deviation of 8.91. A high score of 80 indicates that there are students who have an excellent understanding of digital citizenship, while the lowest score of 48 indicates that there are still students whose understanding of digital citizenship needs to be improved. An average value of 67.42 which is close to the median value of 68.5 indicates that the distribution of data tends to be symmetrical. The standard deviation of 8.91 indicates that the rate of data dissemination is quite homogeneous, which means that students' understanding of digital citizenship does not vary too much in extremes.

**Table 1.** Variable Frequency Distribution (Digital Citizenship Understanding)

| No. | Interval Classes | Freq. Absolute | Freq. Relative | Xi         | Fx          |
|-----|------------------|----------------|----------------|------------|-------------|
| 1   | 48 - 52          | 5              | 8%             | 50         | 250         |
| 2   | 53 - 57          | 4              | 6%             | 55         | 220         |
| 3   | 58 - 62          | 15             | 23%            | 60         | 900         |
| 4   | 63 - 67          | 6              | 9%             | 65         | 390         |
| 5   | 68 - 72          | 12             | 18%            | 70         | 840         |
| 6   | 73 - 77          | 14             | 21%            | 75         | 1050        |
| 7   | 78 - 82          | 10             | 15%            | 80         | 800         |
|     | <b>sum</b>       | <b>66</b>      | <b>100%</b>    | <b>455</b> | <b>4450</b> |

Table 1 shows variable frequency distribution with fairly even pattern across interval classes. Highest group was in 58-62 interval class with 15 respondents (23%), indicating most students have intermediate digital citizenship understanding. Distribution collected in middle and upper interval classes (58-82) with cumulative percentage of 77% shows majority of students already have sufficient basic understanding.

**Table 2.** Variabel X Interval Categorization ( Digital Citizenship Understanding )



| No.        | Criteria (Score) | Category | Frequency | Percentage  |
|------------|------------------|----------|-----------|-------------|
| 1          | > 76.40          | High     | 10        | 15,15%      |
| 2          | 58,56 – 76,40    | Medium   | 51        | 77,27%      |
| 3          | < 58.56          | Low      | 5         | 7,58%       |
| <b>Sum</b> |                  |          | <b>66</b> | <b>100%</b> |

Table 2 shows majority of students (51 respondents or 77.27%) were in medium category, indicating digital citizenship understanding is fairly good but not optimal. Ten respondents (15.15%) were in high category, while only 5 respondents (7.58%) were in low category.

Analysis per indicator showed Digital Etiquette obtained highest average score (3.42 out of 4), indicating students sufficiently understood importance of politeness in social media interactions. Digital Security indicator obtained average score of 3.38, Digital Literacy obtained 3.35, while Digital Law and Digital Rights and Responsibilities obtained lower scores (3.28 and 3.31), indicating these aspects need deeper learning.

#### Student Ethical Behavior Variables ( Variable Y)

Student ethical behavior data that had been collected from 66 respondents with 12 valid statement items showed the following results: highest score 48, lowest score 27, range 21, average 40.28, median 40, mode 48, and standard deviation 5.43. The highest score of 48, which is the maximum score, shows that there are students who display excellent ethical behavior in using TikTok. The lowest score of 27 indicates that there are still students whose ethical behavior on social media needs to be corrected and improved. The average value of 40.28, which is almost the same as the median value of 40, indicates that the distribution of data tends to be normal and symmetrical. The relatively small standard deviation of 5.43 indicates that students' ethical behavior is quite homogeneous and does not vary too much in extremes among respondents.

**Table 3.** Variable Y Frequency Distribution (Student Ethical Behavior)

| No.        | Interval Classes | Absolute Frequency | Relative Frequency | Xi           | Fx          |
|------------|------------------|--------------------|--------------------|--------------|-------------|
| 1          | 27 – 29          | 2                  | 3%                 | 28           | 56          |
| 2          | 30 – 32          | 4                  | 6%                 | 31           | 124         |
| 3          | 33 – 35          | 6                  | 9%                 | 34           | 204         |
| 4          | 36 – 38          | 14                 | 21%                | 37           | 518         |
| 5          | 39 - 41          | 11                 | 17%                | 40           | 440         |
| 6          | 42 – 44          | 9                  | 14%                | 43           | 387         |
| 7          | 45 - 48          | 20                 | 30%                | 46,5         | 930         |
| <b>sum</b> |                  | <b>66</b>          | <b>100%</b>        | <b>259,5</b> | <b>2659</b> |

Table 3 shows the frequency distribution of the variables of students' ethical behavior that has an interesting distribution pattern. The highest group was found in the 45-48 interval class with 20 respondents or 30% of the total total respondents, indicating that the largest proportion of students exhibited excellent ethical behavior in using TikTok. The lowest frequency was found in the 27-29 interval class with only 2 respondents or 3%, indicating that very few students exhibited low ethical behavior. The distribution of data showing concentration in the upper interval classes (39-48) with a cumulative percentage of 61% indicates that the majority of students have already shown good ethical awareness in the context of social media use. However, there were still 12 respondents or 18% who were in the lowest three interval classes (27-35), which shows the need for special attention to improve the ethical behavior of this group through more intensive guidance and education.

**Table 4.** Variable Y Interval Categorization

| No. | Criteria (Total Score) | Category | Frequency | Percentage |
|-----|------------------------|----------|-----------|------------|
| 1   | > 45.67                | High     | 12        | 18,18%     |
| 2   | 34,57 – 45,67          | Medium   | 45        | 68,18%     |
| 3   | < 34.57                | Low      | 9         | 13,64%     |

2389

|  |               |                         | Kewarganegaraan Digital | Perilaku Etis |
|--|---------------|-------------------------|-------------------------|---------------|
|  | Perilaku Etis | N                       | 66                      | 66            |
|  |               | Correlation Coefficient | .775**                  | 1.000         |
|  |               | Sig. (2-tailed)         | .000                    | .             |
|  |               | N                       | 66                      | 66            |

**Table 5.** Interpretation of Relationship Strenght Level

| Value $\rho$ (rho) | Relationship Level |
|--------------------|--------------------|
| 0,00–0,19          | Very low           |
| 0,20–0,39          | Low                |
| 0,40–0,59          | Moderate           |
| 0,60–0,79          | Strong             |
| 0,80–1,00          | Very Strong        |

Spearman Rank correlation test results showed correlation coefficient ( $\rho$ ) of 0.775 with significance value of 0.000 ( $p < 0.05$ ). Referring to Table 5 on the interpretation of the level of relationship strength, the value of the correlation coefficient of 0.775 which is in the range of 0.60-0.79 shows that there is a strong relationship between the understanding of digital citizenship and students' ethical behavior in using TikTok, close to the limit of a very strong category (0.80). A significance value of 0.000 that is smaller than 0.05 indicates that the association is statistically significant, meaning that the association found did not occur by chance but actually existed in the population. The correlation coefficient with a positive value shows that the direction of the relationship between the two variables is unidirectional, which means that the higher the student's understanding of digital citizenship, the higher their ethical behavior in using TikTok social media. Based on these results, an alternative hypothesis ( $H_a$ ) stating that there is a positive and significant relationship between understanding digital citizenship and students' ethical behavior is accepted, while the null hypothesis ( $H_0$ ) is rejected.

The strength of the relationship of 0.775 can be interpreted that the understanding of digital citizenship makes a very substantial contribution to the formation of students' ethical behavior on social media. The calculable coefficient of determination ( $r^2$ ) value of the Spearman correlation coefficient is about 60%, meaning that 60% of the variation in students' ethical behavior can be explained by their understanding of digital citizenship, while the remaining 40% is influenced by other factors not examined in this study. Other factors that may affect students' ethical behavior on social media include family environment, peer influence, religious values, personality characteristics, and personal experiences in using social media. Nonetheless, the contribution of 60% of digital citizenship understanding to ethical behavior suggests that this variable is a very important factor and cannot be ignored in efforts to shape responsible digital behavior among students.

## Discussion

### The Relationship of Digital Citizenship Understanding to Students' Ethical Behavior

Results showed positive and significant relationship between digital citizenship understanding and students' ethical behavior in TikTok use, with Spearman correlation coefficient of 0.775 ( $p < 0.05$ ), aligning with Ribble's (2015) conceptual framework that digital citizenship encompasses cognitive dimensions (understanding norms and rules), technical dimensions (operational skills), and affective dimensions (attitudes and values) that collectively shape digital behavior. This finding operationalizes Ribble's theoretical model by demonstrating how mastery of five digital citizenship elements Digital Etiquette, Digital Literacy, Digital Law, Digital Rights and Responsibilities, and Digital Security translates into

measurable ethical behavior patterns characterized by moral awareness, accountability, and empathy.

The strong correlation substantiates theoretical propositions from Choi et al. (2017) and Richardson et al. (2021) regarding digital citizenship as substantial predictor of responsible online behavior. Chen et al. (2021) emphasized that digital citizenship is multidimensional concept including cognitive, technical, and social aspects that interact to form digital behavior. Martin et al.'s (2018) ethical behavior framework complements Ribble's model by providing specific behavioral indicators moral awareness, accountability, and empathy that serve as observable manifestations of internalized digital citizenship principles. The 60% determination coefficient empirically validates the theoretical premise that cognitive understanding of digital citizenship norms and principles substantially influences behavioral outcomes in digital environments.

In TikTok context, these findings have particular significance considering Regasa et al. (2023) found the platform's complex impact on students' academic, social, and psychological aspects. Nugroho et al. (2023) show that TikTok use significantly influences student behavior, so digital citizenship understanding serves as important protective factor. This strong relationship aligns with Choi's (2016) view that digital citizenship reflects individuals' capacity to engage online responsibly and ethically. Wang and Shang (2024) demonstrated that social and parasocial interactions on TikTok affect users' well being, with algorithmic awareness and compulsive use as mediating variables, suggesting contextual factors moderate the understanding behavior relationship.

Although this study identified strong relationship, remaining 40% of variance in ethical behavior is shaped by other factors warranting investigation. Choi et al. (2018) found that digital citizenship levels are influenced by background characteristics, internet use patterns, and psychological traits. In addition, contextual influences such as family dynamics, peer interactions, and religious values likely play significant roles in shaping complex connections between ethical understanding and actual behavior on social media platforms.

#### **Student Digital Citizenship Understanding Level**

The majority of students (77.27%) were in the medium digital citizenship understanding category, with only 15.15% in the high category and 7.58% in the low category. This distribution indicates that even if students have an adequate foundation of understanding, there is still significant room for improvement towards the optimal category. Capuno et al. (2022) emphasize that the implementation of digital citizenship education requires a comprehensive pedagogical approach involving knowledge transfer, attitude development, and practical skills. Jones and Mitchell (2016) affirm the importance of clear definitions and measurements of adolescent digital citizenship to design effective educational interventions.

Analysis per indicator showed that Digital Etiquette obtained the highest score (3.42), indicating that students' awareness of digital politeness was quite good. This finding is in line with Ribble's (2015) concept of the nine elements of digital citizenship which are grouped into respect, educate, and protect. However, Digital Law and Digital Rights and Responsibilities obtained lower scores (3.28 and 3.31), indicating that understanding of legal aspects and digital responsibilities requires deepening. Saidi et al. (2022) found that digital literacy and citizenship literacy have an effect on students' personal resilience, indicating the importance of comprehensive understanding in all dimensions.

The gap in understanding in various dimensions needs to be a special concern in the development of the PPKn curriculum in madrasas. Connolly and Miller (2022) emphasize the importance of continuous evaluation and revision of digital citizenship measurement instruments to ensure relevance to technological developments. In the context of madrasas, the integration of understanding aspects of digital law with religious values can be a more meaningful approach. Wahyudin and Karimah (2016) emphasized the importance of social media communication ethics paying attention to Indonesian cultural norms and values to create a contextual approach.

The finding that the understanding of Digital Etiquette is relatively high shows the value of politeness and manners in Islamic education can be a strong foundation for the development of digital ethics. Praptiningsih (2017) discusses the implications of netiquette as social media manners in the context of religious da'wah. Al-Ayyubi (2019) explores the ethics of social media in responding to hoaxes from the perspective of hadith. Saputra (2022) shows that the integration of digital citizenship in civics education can foster internet ethics among students, relevant to the context of madrasah students.

#### **Students' Ethical Behavior Level in TikTok Use**

Majority of students (68.18%) were in moderate ethical behavior category, with 18.18% in high category and 13.64% in low category. Interestingly, percentage of students with low ethical behavior was higher than low digital



citizenship understanding (7.58%), indicating gap between cognitive understanding and actual behavioral implementation. This gap illustrates tension between Martin et al.'s (2018) theoretical constructs while students demonstrate awareness of ethical principles (moral awareness dimension), translating this awareness into consistent accountable actions remains challenging, particularly in TikTok's unique sociotechnical environment.

Harrison and Polizzi (2022) found adolescents often face complex moral dilemmas when making online decisions, so effective education must provide moral framework for ethical decisions. This phenomenon suggests knowledge alone is insufficient to guarantee consistent ethical behavior without practical skill development and self-regulation support. Understanding-behavior gap can be explained through TikTok's unique characteristics creating social pressure. Yao et al. (2023) found problematic TikTok use is associated with depression and social anxiety among adolescents. Neumann and Rhodes (2024) emphasized that social media morality is complex phenomenon where digital environment with anonymity, social distance, and content permanence creates different moral context than face to face interaction.

Analysis per indicator showed Empathy obtained highest score (3.48), while Accountability was lowest (3.28), indicating personal responsibility for digital content remains challenge. This finding reveals partial operationalization of Martin et al.'s (2018) framework students demonstrate capacity for empathetic perspective-taking but struggle with accountability dimension requiring acknowledgment of personal agency and consequences in digital actions. Brady et al. (2024) emphasize that social media platforms create unique moral ecosystem where moral content spreads faster and triggers stronger emotional responses. Harahap et al. (2024) emphasized importance of education helping adolescents develop critical and reflective skills in social media use. Al Ketbi et al. (2025) found appropriate education can increase online ethical awareness among adolescents through structured interventions.

These findings have important implications that learning should go beyond knowledge transfer towards character development and practical skills. Bridging Ribble's (2015) cognitive framework with Martin et al.'s (2018) behavioral dimensions requires pedagogical approaches incorporating experiential learning, moral reasoning exercises, and guided practice in authentic digital contexts. Kim and Choi (2024) emphasize importance of translingual and transemiotizing perspectives in understanding students' digital identity development. Walters et al. (2019) emphasized importance of educators having deep digital citizenship understanding to guide students effectively in integrating local values with universal digital citizenship principles.

#### **Practical Implications and Research Contributions**

This research makes important empirical contribution to digital citizenship education development in Indonesia, especially in madrasah contexts. Finding of strong relationship between digital citizenship understanding and ethical behavior provides empirical justification for systematic integration of digital citizenship materials in PPKn curriculum. Yang et al. (2025) through systematic review of TikTok application in higher education identified various implementation factors needing consideration in platform use for educational purposes. This research shows approach integrating Islamic values, Pancasila, and universal digital citizenship principles can create contextual and meaningful learning model for madrasah students.

Results indicate need to design PPKn learning strategy focusing not only on cognitive aspects but also practical competency development through experiential learning. Obasi (2024) found TikTok can have both positive and negative effects depending on usage patterns. Netwong (2013) emphasizes importance of pedagogical approach explicitly teaching modern digital citizenship concepts. Akcil and Bastas (2021) found attitudes and behaviors do not always align with knowledge, so learning must include practice, reflection, and guidance components in real situations to bridge theory practice gap.

This study also offers policy insights regarding PPKn teachers' professional development, particularly in integrating digital citizenship education into instructional practices. Zahra et al. (2022) reported excessive TikTok use can contribute to mental health issues by mediating academic performance declines. Mohamed and Hassan (2025) identified significant negative effect of TikTok addiction on academic outcomes. Rodriguez et al. (2021) emphasize ethical challenges associated with social media use must be understood within specific user contexts and vulnerabilities, implying teachers need specialized competencies helping students navigate today's social media landscape responsibly, ethically, and healthily.

#### **Research Limitations**

This study has several limitations. First, correlational design cannot determine causal relationships between

variables. Second, limited sample from one madrasah (66 students) restricts generalization to broader contexts. Third, reliance on self-report data may be influenced by social desirability bias. Fourth, this study did not account for external factors such as family environment, peer influence, TikTok use intensity, and personality characteristics potentially affecting students' ethical behavior. Azefack and Huboh (2024) found cultural and religious values play important roles in shaping adolescents' ethical behavior on social media. Future research needs longitudinal or experimental designs with larger, more diverse samples, exploring mediator and moderator variables, and using mixed-methods approaches for deeper understanding of digital citizenship understanding transformation into consistent ethical behaviors in TikTok use contexts among Indonesian students.

## CONCLUSION

This study concludes that students' understanding of digital citizenship is strongly and positively associated with their ethical behavior in using TikTok. Digital citizenship serves as a cognitive and moral foundation that shapes adolescents' moral awareness, accountability, and empathy in digital interactions. Despite relatively adequate levels of digital citizenship understanding among students, a gap remains between knowledge and consistent ethical behavior, particularly in accountability dimension. Findings underscore importance of integrating digital citizenship education systematically into civic education curricula, especially within madrasah contexts where integration of Islamic values, Pancasila, and universal digital citizenship principles creates contextually meaningful approach. While this study is limited by its correlational design, single-site sample, and reliance on self-report data, it provides valuable empirical insights for educators and policymakers. Future research is encouraged to employ mixed-methods and longitudinal designs to better understand how digital citizenship education can be transformed into sustainable ethical digital practices, considering broader contextual factors including family environment, peer influences, platform characteristics, and cultural-religious values shaping adolescents' digital behavior in Indonesian educational contexts.

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