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# Youth netizens as global citizens: digital citizenship and global competence among undergraduate students

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The digitalization of everyday life among young people exposed them to knowledge and cultures from societies outside their own. Digital citizenship, characterized by online respect and civic engagement, can facilitate students' positive interactions within the global community and enhance their global competencies, including self-awareness, intercultural communication, and global knowledge. However, empirical studies linking digital citizenship and global competence are limited. Drawing from an online survey sample of 698 Filipino undergraduate students, this cross-sectional study examines the relationship between digital citizenship and global competence. Findings indicate that online civic engagement and being a working student positively predict all domains of global competence. Online respect positively correlated with intercultural communication. Certain demographic and education-related variables were significant predictors of at least one domain of global competence ( $p < 0.05$ ). The findings underscore the importance of educational institutions fostering online social participation to cultivate globally competent students.

## KEYWORDS

cross-sectional studies, digital citizenship, global competence, undergraduate students, online survey, youth

## 1 Introduction

In the last two decades, the Internet and related digital technologies have been increasingly essential to people's lives. As of July 2023, there have been around 5.19 billion people on the Internet, demonstrating an annual Internet penetration growth rate of 2.1%; moreover, an average person spends an estimated 6.67 h on the Internet daily (Kepios, 2023). The daily users of the Internet and other related digital technology (e.g., social media and mobile phones) are referred to as "netizens" (Syahputra and Hafiar, 2019). Netizens typically spend their day acquiring, processing, and storing vast amounts of data. The digitalization of society makes it easier for netizens to manage daily tasks, engage with people, and communicate with anyone globally. Based on age-disaggregated Internet penetration rates, Kepios (2023) estimates that almost half of netizens are within the youth age bracket. There is reason to believe that Generation Z (Gen Z, born from the year 1997 to 2012), the birth cohort whose coming of age has been highly socialized by the Internet and social media (Ibáñez-Cubillas et al., 2017), has learned and demonstrated social and citizenship behaviors in primarily in online environments. This study focuses on digital citizenship among young netizens.

Digital citizenship can be broadly defined as the safe and responsible use of digital technologies, possession of technical competencies, and prosocial participation in online activities (Oyedemi, 2020). Scholars such as Mossberger et al. (2007) advocate integrating digital citizenship education into formal curricula to equip youth with the necessary skills and attitudes for responsible online participation. This ensures that the youth become a part of a respectful, informed, and engaged “netizenry,” which strives to build an online environment that is inclusive and nurturing for all (MacKinnon, 2012).

Moreover, being citizens in cyberspace also entails interacting with other online actors beyond geopolitical boundaries. Due to their engagement in the digital world that affords almost boundless access to multinational and multicultural experiences, youth netizens also become global citizens. Previous research suggests that Gen Z youth have become more concerned about global issues, such as climate change, racism, gender equality, and other sustainable development challenges than older cohorts (Mitchell, 2020). There is reason to believe that individuals who practice digital citizenship may also become globally competent. As the world becomes more interdependent, the international community has begun to realize the salience of acquiring competencies that allow individuals to interact and function in a global and multicultural environment (Bernardo et al., 2022). Global competence entails examining local, global, and intercultural concerns, as well as comprehending and appreciating diverse cultures and worldviews. A globally competent individual should learn to effectively communicate, engage, and relate with others, while also holding state actors accountable for the common good (Asia Society and OECD, 2018). Thus, this study examines the relationship between digital citizenship and global competence among Filipino undergraduate students.

The Philippines has an Internet penetration rate of 73.1 percent in 2023 (Kepios, 2023) and has been tagged as the “Social Media Capital of the World” from 2015 until 2021 (Chua, 2021). A Filipino netizen has been noted to spend an average of more than 10 h on the Internet daily (Chua, 2021). However, challenges such as poor Internet access (Motte-Muñoz, 2020) and the rapid spread of misinformation (Chua, 2021) hinder young Filipino netizens’ capacities for digital citizenship. Moreover, a recent study has noted that Filipino students’ global competencies are still moderate and can be further improved (Bernardo et al., 2022). Therefore, by enhancing digital citizenship, Filipino youth netizens can develop the skills and knowledge necessary to improve their global competence (Motte-Muñoz, 2020).

## 1.1 Global competence

Scholars have multiple characterizations of global competence for students. For instance, the Asia Society, in collaboration with the Organization for Economic Cooperation and Development (Asia Society and OECD, 2018), defines globally competent youth as individuals capable of examining the world beyond their local communities. They should also appreciate cultural perspectives and worldviews, communicate effectively across diverse cultural backgrounds, and engage in collective actions for both local and global issues. In addition, a systematic analytic study in Ukraine includes knowledge of global history, culturally aware critical thinking, embracing diversity, and having a sense of global responsibility as essential components of global competence that must be taught to

students (Anoshkova, 2022). Furthermore, a multi-country study by Ortiz-Marcos et al. (2020) has developed a framework for global competence among professionals, which includes categories such as service to the organization, cooperation, communication, leadership, self-knowledge, and proactivity. Kerkhoff and Cloud (2020) suggest that teaching global competence to young students should foster abilities related to navigating tensions, being self-reflexive, building empathy, and bringing global perspectives to local settings (e.g., the classroom). Additionally, Liu et al. (2020), in their study conducted in select Chinese universities, propose that domains of global competence encompass knowledge of the world and globalization, cross-cultural communication, utilization of information technology, and a willingness to interact with and understand the values of individuals from different cultural backgrounds.

Building upon this scholarly discourse, our study aligns with Morais and Ogden’s (2011) conceptualization of global competence, emphasizing active recognition and understanding of diverse cultural values and practices, facilitating effective interaction, communication, and collaboration across cultural boundaries. Following Morais and Ogden (2011), we identify three facets of global competence. These are *self-awareness*, which refers to recognizing one’s abilities and limitations related to intercultural engagements; *intercultural communication*, which refers to possessing skills for verbal and non-verbal communication with people from other cultures; and *global knowledge*, which refers to being aware of global issues and individual actions that can address them (Morais and Ogden, 2011).

While understanding the conceptual framework of global competence is vital, empirical evidence suggests that its development is influenced by various socio-demographic and educational factors. For instance, Karanikola (2022) suggests that global competence among university students varies with age, while gender differences were observed, with males scoring higher. This is supported by Grotlüschen (2018), who posits that global competence assessments favor male students and high-income students. Furthermore, the type and quality of education are recognized as precursors to global competence. Karanikola (2022) states that the type of study program influences the global ability of university students. Schools with teachers and educational managers who employ strategies and resources to integrate global awareness and sensitivity into instruction and the overall school environment play a crucial role in developing globally competent students (Asia Society and OECD, 2018). Moreover, educational programs that foster collaborative, interdisciplinary learning have been found to be more likely to promote global competence among students (Shams and George, 2006). Aside from socio-demographic and educational factors, the present study’s central inquiry is the role of online participation, particularly digital citizenship, in developing global competence among young undergraduates.

## 1.2 Digital citizenship

Since its first appearance in literature in the late 2000s, the concept of “digital citizenship” has evolved. Ribble and Bailey (2007), arguably one of the earliest scholars who coined the term, described digital citizenship as the ethical and responsible use of digital technologies. Digital citizenship refers to knowledge, skills, and values related to digital communication, commerce, literacy, security, rights, and

etiquette (Ribble and Bailey, 2007). Digital citizens use digital, Internet, and other information communication technologies (ICTs) with the intent of safely navigating the digital environment, positively contributing to the digital world, and diminishing the negative impact of ICTs on themselves and others (Kim and Choi, 2018; Yildiz et al., 2020). Moreover, Manzuoli et al. (2019) describe digital citizens as those who use digital technology as a “bridge” towards empowering self and other users. Aside from having technical skills in navigating the Internet and fostering online networks, taking a critical stance, and engaging in political activism are key manifestations of digital citizenship (Connolly and Miller, 2022). In the same vein, MacKinnon (2012) defines “netizens” as the common citizenry of the digital world who work proactively with one another to protect democracy and the rights of other netizens and demand accountability from public and private actors. Aligned with the aforementioned conceptualizations, we operationalize digital citizenship based on the two facets specified by Jones and Mitchell (2016) that are manifested by young people. These are *online respect*, which refers to the young netizen’s cordial and non-threatening interactions with other people online, and *online civic engagement*, which refers to their actions in digital spaces with the intent to contribute to the well-being of individuals and social groups (Jones and Mitchell, 2016).

The hypothesized link between digital citizenship and global competence appeals to the theoretical assertion of Schroeder (2018), which emphasizes the Internet’s role in fostering globalized online sociability. Schroeder (2018) elucidates how daily interactions on the Internet expose users to diverse cultural, ethnic, and religious perspectives, thereby enhancing their appreciation of different peoples, norms, products, and ideologies. This globalized online sociability necessitates reciprocal engagement and active participation to cultivate meaningful relationships and mediated solidarity (Schroeder, 2018). As citizens of the digital world, individuals must adeptly navigate the digital landscape, discerning social cues in mediated environments, and effectively network with individuals and communities from various social backgrounds in online spaces (Choi et al., 2017; Schroeder, 2018).

Moreover, contextualizing this within the Philippine setting, where online interactions are deeply ingrained in daily life, the importance of digital citizenship has added significance. In a country characterized by diverse cultural landscapes and regional disparities, the Internet is a vital platform for connecting individuals across geographical and sociocultural boundaries. Filipino netizens, like their global counterparts, engage in digital spaces where they encounter a myriad of perspectives, ideologies, and social norms (Lanuza, 2003; de Guzman and Fabian, 2009; Velasco, 2020). Therefore, fostering digital citizenship among Filipino youth entails promoting responsible online behavior and cultivating an awareness of the diverse cultural fabric of the nation and the world at large.

MacKinnon (2012) emphasizes that a mature netizenry, synonymous with digital citizenship, involves critical engagement with national and international issues. In the Philippines, digital platforms have played a crucial role in shaping public discourse and mobilizing social movements (David, 2013). Digital citizenship in this context is proactive, advocating for social justice, democratic values, and accountability from both public and private entities. Searson et al. (2015) further emphasize the importance of understanding globalization and its associated technologies within the local educational context. In Philippine educational institutions, where

access to digital resources and technological infrastructure varies, fostering digital citizenship becomes paramount in ensuring that students from diverse backgrounds are equipped with the skills and knowledge necessary to navigate the complexities of the digital age (Cleofas et al., 2022; Clamor and Saloma, 2023). Consistent with these findings, peripheral evidence has linked digital citizenship to increased global awareness (Choi et al., 2017) and improved global readiness among students (Larson and Brown, 2017; Asia Society and OECD, 2018).

### 1.3 The present study

Existing literature hints at a potential association between digital citizenship and global competence (Choi et al., 2017; Larson and Brown, 2017; Asia Society and OECD, 2018). However, these prior studies have not quantitatively tested this correlation using the specific constructs and domains forwarded by the present research. Moreover, students from developing countries, such as the Philippines, are underrepresented in this area of study. Framing global online sociability through the constructs of citizenship and competence in the Global Southern context helps sharpen the theoretical assertions of Schroeder (2018), whose empirical bases are mainly in the Global North. Furthermore, we contend that analyzing how specific expressions of digital citizenship influence the facets of global competence among young college netizens can assist educators and other stakeholders in designing and implementing curricula and interventions. These efforts aim to enhance students’ safe and productive navigation of online spaces and capitalize on digital experiences to improve their competencies. Hence, the main aim of this study is to determine the predictive relationship between digital citizenship (i.e., online respect and civic engagement) and global competence (i.e., self-awareness, intercultural competence, and global knowledge) among Filipino undergraduate students. Appealing to Schroeder (2018) and aligning with the study objective, the following research hypotheses are forwarded:

$H_1$ : Digital citizenship positively predicts self-awareness.

$H_2$ : Digital citizenship positively predicts intercultural competence.

$H_3$ : Digital citizenship positively predicts global knowledge.

## 2 Methods

### 2.1 Study design, participants, procedure

This cross-sectional study is part of a larger quantitative research project that examines citizenship behaviors among college netizens in the Philippines. Based on G-Power analysis, the minimum sample size required for this study is 324 ( $f^2=0.15$  power=0.8, predictors=8,  $p<0.05$ , number of regression models=3). The present study involves a total of 698 participants who fulfilled the following eligibility criteria: (1) age between 18 to 24 years old; (2) must be enrolled in an undergraduate program in any college or university in the Philippines; and (3) must have access to the Internet. Data were collected via an online survey (i.e., Google Forms), distributed through social media

platforms, and the personal and professional networks of the researchers. The study protocol adhered to the principles of the Declaration of Helsinki and received departmental clearance for ethical conduct. Informed consent was secured digitally through a yes/no response on the first page of the online form. No personal information was collected. All collected data were kept confidential and stored in a password-protected cloud.

## 2.2 Measures

### 2.2.1 Background characteristics

The following demographic and education-related variables were collected: age (in years), sex assigned at birth (male = 1, female = 0), estimated household income (Low [PhP 21,913 and below] = 1, Middle [PhP 21,914 to 131,483] = 2, High [PhP 131,484 and above] = 3; note: 1 USD  $\approx$  PhP 55), working status (yes = 1, no = 0), nature of degree (humanities and social sciences [HUMSS] = 1, accountancy and business management [ABM] = 2, science, technology, engineering and mathematics [STEM] = 3), and school type (public = 1, private sectarian = 2, private non-sectarian = 3). These profile variables were used as covariates in the study.

### 2.2.2 Online digital citizenship scale

Developed by Jones and Mitchell (2016), online digital citizenship scale (ODCS) is an 11-item scale that assesses the extent to which young Internet users engage in digital citizenship based on two domains: online respect and online civic engagement. Respondents were asked to evaluate how they relate to each statement (e.g., “I am careful about how I say things online so they do not come across the wrong way”) using a 5-point response scale (1 = not at all like me, 5 = very much like me). ODCS has demonstrated acceptable reliability ( $\alpha = 0.70\text{--}0.92$ ; Jones and Mitchell, 2016).

### 2.2.3 Global competence scale

The Global Competence (GC) Scale is a component of the Global Citizenship Scale by Morais and Ogdén (2011). GC is a 13-item scale with three sub-domains: self-awareness (4 items;  $\alpha = 0.81$ ), intercultural communication (6 items;  $\alpha = 0.77$ ), and global knowledge (3 items;  $\alpha = 0.73$ ). Participants were asked to respond to each statement (e.g., “I am confident that I can thrive in any culture or country”) using a 5-point scale (1 = strongly disagree, 5 = strongly agree). For this study, the computed overall Cronbach alpha for GC was at an acceptable level ( $\alpha = 0.86$ ).

## 2.3 Data analysis procedure

Key variables were summarized using descriptive statistics, specifically mean and standard deviation for continuous variables and frequency and percentage for categorical variables. Inferential statistics were used to test the hypotheses. First, the correlation of global competence domains with digital citizenship was tested using bivariate statistics, such as independent *t*-test, one-way ANOVA, and Pearson R correlation. Consequently, the significant correlates were included in the regression analyses to test the significant predictive relationships with the three domains of GC while controlling for background characteristics. Bootstrapping was conducted using 5,000 replicates.

The significance level was set at 0.05. JASP 0.16.2 was used to run the analyses.

## 3 Results

### 3.1 Descriptive statistics

As seen in Table 1, most of the respondents are 19 years old ( $M = 19.99$ ,  $SD = 1.09$ ), female ( $n = 394$ , 56.4%) from middle-income households ( $n = 321$ , 46.0%). Only 12.9 percent ( $n = 90$ ) are working students. Moreover, most respondents are enrolled in HUMSS degree programs ( $n = 284$ , 40.7%) in private, sectarian colleges/universities ( $n = 420$ , 60.2%). Under digital citizenship, student respondents reported high levels of online respect ( $M = 4.32$ ,  $SD = 0.59$ ) and online civic engagement ( $M = 3.88$ ,  $SD = 0.74$ ). Meanwhile, under global competence, respondents garnered moderate levels of self-awareness ( $M = 3.37$ ,  $SD = 0.80$ ) and global knowledge ( $M = 3.43$ ,  $SD = 0.88$ ), and high levels of intercultural communication ( $M = 4.06$ ,  $SD = 0.61$ ). All key continuous variables yielded  $<|2|$  skewness and kurtosis scores; hence, parametric inferential tests can be used.

### 3.2 Bivariate statistics

Table 2 shows the bivariate correlations of profile variables and digital citizenship with the three domains of global citizenship. Self-awareness was significantly correlated with household income ( $F = 5.70$ ,  $p = 0.004$ ), working status ( $t = 2.66$ ,  $p = 0.088$ ), online respect ( $r = 0.213$ ,  $p < 0.001$ ), and online civic engagement ( $r = 0.376$ ,  $p < 0.001$ ). On the other hand, intercultural communication was significantly correlated with sex ( $t = 5.22$ ,  $p < 0.001$ ), household income ( $F = 8.84$ ,  $p < 0.001$ ), working status ( $t = -2.83$ ,  $p = 0.005$ ), nature of degree ( $F = 5.16$ ,  $p = 0.006$ ), school type ( $F = 3.45$ ,  $p = 0.034$ ), online respect ( $r = 0.275$ ,  $p < 0.001$ ) and online civic engagement ( $r = 0.282$ ,  $p < 0.001$ ). Finally, global knowledge was significantly correlated with household income ( $F = 3.36$ ,  $p = 0.036$ ), working status ( $t = 2.71$ ,  $p = 0.007$ ), nature of degree ( $F = 3.99$ ,  $p = 0.019$ ), and online civic engagement ( $r = 0.333$ ,  $p < 0.001$ ).

### 3.3 Multiple regression analyses

As seen in Table 3, significant bivariate correlates were included as predictors in the regression models of the domains of global competence. Bootstrapping was applied based on 5,000 replicates. Model 1 significantly predicts self-awareness ( $F = 25.285$ ,  $p < 0.001$ ) and explains 15.4% of its variance. Significant predictors of self-awareness include working status ( $B = 0.176$ ,  $p = 0.035$ ) and online civic engagement ( $B = 0.357$ ,  $p < 0.001$ ). Working students with higher online civic engagement were more likely to exhibit self-awareness.

Model 2 significantly predicts intercultural communication ( $F = 12.799$ ,  $p < 0.001$ ) and explains 15.7% of its variance. Significant predictors of intercultural communication include sex ( $B = -0.149$ ,  $p = 0.001$ ), household income ( $B_{\text{High vs Low Income}} = 0.205$ ,  $p = 0.006$ ), nature of degree ( $B_{\text{ABM vs HUMSS}} = -0.126$ ,  $p = 0.015$ ), online respect ( $B = 0.16$ ,

TABLE 1 Descriptive statistics of key variables ( $N = 698$ ).

Variable	Mean ( $n$ )	SD (%)	Min	Max	Skewness	Kurtosis
<b>Age</b>	19.99	1.09	18	24	0.61	0.42
<b>Sex</b>						
Male	304	43.6	–	–	–	–
Female	394	56.4	–	–	–	–
<b>Estimated household income<sup>a</sup></b>						
High income	298	42.7	–	–	–	–
Middle income	321	46.0	–	–	–	–
Low income	79	11.3	–	–	–	–
<b>Working status</b>						
Yes	90	12.9	–	–	–	–
No	608	87.1	–	–	–	–
<b>Nature of degree</b>						
HUMSS	284	40.7	–	–	–	–
ABM	202	28.9	–	–	–	–
STEM	212	30.4	–	–	–	–
<b>School Type</b>						
Public	88	12.6	–	–	–	–
Private, Sectarian	420	60.2	–	–	–	–
Private, non-sectarian	190	27.2	–	–	–	–
<b>Digital citizenship<sup>b</sup></b>						
Online respect	4.32	0.59	2.00	5.00	–0.98	0.56
Online civic engagement	3.88	0.74	1.00	5.00	–0.65	0.56
<b>Global competence<sup>b</sup></b>						
Self-awareness	3.37	0.80	1.00	5.00	–0.25	0.25
Intercultural communication	4.06	0.61	1.00	5.00	–0.67	1.43
Global knowledge	3.43	0.88	1.00	5.00	–0.16	–0.19

<sup>a</sup>Low Income = PhP 21,913 and below; Middle Income = PhP 21,914 to 131,483; High Income = PhP 131,484 and up (1 USD is around PhP 55). <sup>b</sup>Low = 1.00–2.33; Moderate = 2.34–3.66; High = 3.67–5.00.

$p < 0.001$ ) and online civic engagement ( $B = 0.143$ ,  $p < 0.001$ ). Higher levels of intercultural communication were observed among female working students from high-income households and HUMMS degree programs and those who reported higher online respect and civic engagement.

Lastly, Model 3 significantly predicts global knowledge ( $F = 16.160$ ,  $p < 0.001$ ) and explains 12.3% of its variance. Significant predictors of self-awareness include working status ( $B = 0.194$ ,  $p = 0.04$ ) and online civic engagement ( $B = 0.375$ ,  $p < 0.001$ ). Working students with higher online civic engagement demonstrated higher global knowledge. Overall, the three models yielded acceptable explanatory power ( $R^2 = 0.123$ – $0.157$ ).

## 4 Discussion

The objective of the present study was to determine the relationship between digital citizenship and the global competence of undergraduate students. To our knowledge, this is the first study in the Philippines that examined these particular constructs and their relationship. The present study's hypotheses are partially supported by

the results; specifically, the online civic engagement domain of digital citizenship yielded a significant positive predictive relationship with global competence. This suggests that student respondents who report higher online civic engagement were likelier to demonstrate higher levels in all domains of global competence. This result evinces the theory of Schroeder (2018) on the role of the Internet in globalizing sociability and is corroborated by prior studies that have linked positive online civic behaviors with global awareness and readiness (Choi et al., 2017; Larson and Brown, 2017; Asia Society and OECD, 2018). As regards the self-awareness domain of global competence, previous research has also demonstrated online prosocial behaviors higher among those with mindful self-awareness and empathy (Lv et al., 2021). On the other hand, prior evidence has shown that positive attitudes towards intercultural communication and interactions were increased by volunteerism, including online volunteerism (Chen and Shyr, 2021). Furthermore, in relation to the domain of global knowledge, online civic engagement and prosocial behaviors among the youth have been linked with increased knowledge and participation in advocacies related to global issues, such as engagement in online protests against racism, political violence, and populist leaders (Armstrong-Carter and Telzer, 2021).

TABLE 2 Bivariate tests for the correlation of profile variables and digital citizenship with global competence.

Independent variables	Global competence								
	Self-awareness			Intercultural communication			Global knowledge		
	Mean $\pm$ SD	Statistic	<i>p</i> -value	Mean $\pm$ SD	Statistic	<i>p</i> -value	Mean $\pm$ SD	Statistic	<i>p</i> -value
Age <sup>a</sup>	–	$r = -0.035$	0.359	–	$r = -0.028$	0.455	–	$r = -0.012$	0.742
Sex <sup>b</sup>									
Male	3.32 $\pm$ 0.88	$t = 1.59$	0.111	3.92 $\pm$ 0.65	$t = 5.22^{***}$	<0.001	3.41 $\pm$ 0.93	$t = 0.59$	0.553
Female	3.41 $\pm$ 0.72			4.16 $\pm$ 0.55			3.45 $\pm$ 0.84		
Estimated household income <sup>c</sup>									
High income	3.48 $\pm$ 0.77	$F = 5.70^{**}$	0.004	4.17 $\pm$ 0.58	$F = 8.84^{***}$	<0.001	3.54 $\pm$ 0.96	$F = 3.36^*$	0.036
Middle income	3.27 $\pm$ 0.78			4.00 $\pm$ 0.58			3.36 $\pm$ 0.78		
Low income	3.39 $\pm$ 0.91			3.89 $\pm$ 0.74			3.33 $\pm$ 0.92		
Working status <sup>b</sup>									
Yes	3.58 $\pm$ 0.71	$t = -2.66^{**}$	0.008	4.23 $\pm$ 0.53	$t = -2.83^{**}$	0.005	3.67 $\pm$ 0.82	$t = -2.71^{**}$	0.007
No	3.34 $\pm$ 0.8			4.03 $\pm$ 0.61			3.4 $\pm$ 0.88		
Nature of degree <sup>c</sup>									
HUMSS	3.45 $\pm$ 0.76	$F = 2.86$	0.059	4.14 $\pm$ 0.56	$F = 5.16^{**}$	0.006	3.5 $\pm$ 0.88	$F = 3.99^*$	0.019
ABM	3.37 $\pm$ 0.8			3.98 $\pm$ 0.66			3.48 $\pm$ 0.85		
STEM	3.27 $\pm$ 0.84			4.01 $\pm$ 0.6			3.29 $\pm$ 0.89		
School Type <sup>c</sup>									
Public	3.26 $\pm$ 0.75	$F = 1.35$	0.260	3.9 $\pm$ 0.61	$F = 3.45^*$	0.034	3.3 $\pm$ 0.83	$F = 1.37$	0.256
Private, sectarian	3.37 $\pm$ 0.81			4.08 $\pm$ 0.6			3.46 $\pm$ 0.9		
Private, non-sectarian	3.43 $\pm$ 0.79			4.09 $\pm$ 0.62			3.43 $\pm$ 0.85		
Digital citizenship <sup>a</sup>									
Online respect	–	$r = 0.213^{***}$	<0.001	–	$r = 0.275$	<0.001 <sup>***</sup>	–	$r = 0.055$	0.147
Online civic engagement	–	$r = 0.376^{***}$	<0.001	–	$r = 0.282$	<0.001 <sup>***</sup>	–	$r = 0.333^{***}$	<0.001

<sup>a</sup>Pearson *r* correlation test; <sup>b</sup>Independent *t*-test; <sup>c</sup>Oneway ANOVA. \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .

Meanwhile, our results suggest that intercultural communication was the only domain of global competence that significantly correlated with online respect. Specifically, students who reported higher online respect were observed to have better scores in intercultural communication. This supports evidence from a systematic review, which revealed that “respect” is a normative concept commonly associated with interculturalism and intercultural dialogue (Elias and Mansouri, 2020). Moreover, Isman and Canan Gungoren (2014) argue that being respectful in online communications involves acknowledging and considering other netizens’ cultural backgrounds and right to expression. Also, according to Pathak-Shelat (2014), the Internet provides a space for cross-cultural communication and dialogue among youth, particularly when civility, respect, and open-mindedness are practiced.

Furthermore, the study’s findings reveal possible demographic and educational factors that can predict intercultural communication. Female respondents reported significantly higher intercultural communication scores. This finding is consistent with prior research indicating that men may exhibit more ethnocentric tendencies than women (Tompkins et al., 2017). Additionally, students from high-income households scored significantly higher in intercultural communication, possibly due to

greater exposure to diverse cultural experiences facilitated by their financial resources (Maharaja, 2018). Moreover, our results indicate that students enrolled in HUMSS programs tend to exhibit higher intercultural communication scores than those in business programs, possibly due to the emphasis on sociocultural concepts in the HUMSS curriculum (see Department of Education, 2012).

Furthermore, working status is another social variable that emerged as a potential gradient to all domains of global competence. Working students were observed to have higher scores for self-awareness, intercultural competence, and global knowledge. Similarly, previous research has shown that immersion in various work settings improves cultural competence among allied health students (Brottman et al., 2020).

## 4.1 Limitations

While the study offers new insights into the relationship between online citizenship and global competencies, it is essential to consider its limitations. Firstly, the study’s cross-sectional design prevents the establishment of causality between variables. Additionally, the

TABLE 3 Multiple regression test for the significant predictors of the domains of global competence.

Predictors	B	95% bca <sup>a</sup> CI		p-value	Model statistics		
		Lower	Upper		R <sup>2</sup>	F	p-value
<b>Model 1: self-awareness</b>					0.154	25.285***	<0.001
Working status (Yes = 1)	0.176*	0.019	0.324	0.035			
Household income (ref: Low Income)							
Middle income	-0.096	-0.283	0.102	0.296			
High income	-0.004	-0.194	0.198	0.973			
Online respect	0.095	-0.018	0.208	0.063			
Online civic engagement	0.357***	0.264	0.453	<0.001			
<b>Model 2: intercultural communication</b>					0.157	12.799***	<0.001
Sex (Male = 1)	-0.149**	-0.24	-0.055	0.001			
Working status (Yes = 1)	0.16**	0.044	0.273	0.012			
Household income (ref: Low income)							
Middle income	0.098	-0.069	0.287	0.173			
High income	0.205**	0.038	0.395	0.006			
Nature of degree (ref= HUMSS)							
ABM	-0.126*	-0.231	-0.03	0.015			
STEM	-0.034	-0.134	0.069	0.532			
Type of school (ref= public)							
Private, non-sectarian	0.086	-0.093	0.231	0.276			
Private, sectarian	0.083	-0.074	0.211	0.259			
Online respect	0.16***	0.067	0.259	< 0.001			
Online civic engagement	0.143***	0.076	0.207	< 0.001			
<b>Model 3: global knowledge</b>					0.123	16.160	<0.001
Working status (Yes = 1)	0.194*	0.016	0.356	0.04			
Household income (ref: Low Income)							
Middle income	0.036	-0.169	0.25	0.725			
High income	0.091	-0.117	0.321	0.38			
Nature of degree (ref= HUMSS)							
ABM	-0.018	-0.172	0.119	0.781			
STEM	-0.134	-0.288	0.018	0.075			
Online Civic Engagement	0.375***	0.258	0.472	< 0.001			

<sup>a</sup>Bias corrected accelerated; Bootstrapping based on 5,000 replicates; Coefficient estimate is based on the median of the bootstrap distribution. \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001.

generalizability of the findings may be limited due to the non-random sampling method and reliance on online recruitment. Therefore, caution is warranted when extrapolating these results to youth populations beyond the scope of this study’s sample. Future research endeavors could employ longitudinal designs and random sampling techniques across diverse cultural, educational, and geographical contexts to enhance the breadth and depth of understanding gained from this initial investigation.

## 5 Conclusion

This study contributes to digital communication literature by providing quantitative evidence demonstrating the link between

digital citizenship and the global competence of undergraduate students. Our findings highlight the potential promotive role of online civic engagement and working student status in all domains of global competence (i.e., self-awareness, intercultural communication, and global knowledge). Moreover, our study also suggests that female working students enrolled in humanities and social science degree programs and those who live in high-income households and practice higher online respect may demonstrate higher intercultural communication proficiency.

As we live in an increasingly interdependent and globalized society, students need to be equipped with global competencies to become more efficient and competitive as they enter the world of work. The present study’s findings have practical implications for

higher educational strategies that utilize online tools and platforms, particularly those that focus on students' digital citizenship. For instance, since our results evince the facilitative role of online civic engagement on global competence, educators can employ strategies that expose students to local, regional, and international issues. Teaching strategies, such as developing online advocacy materials and implementing digital interventions and projects that address global social justice concerns, can be included in syllabi/teaching plans to improve overall global competence. Educators from all disciplines must always emphasize among students to convey respectful behaviors when navigating online spaces. Also, engaging in partnerships with foreign schools and universities can provide students with opportunities for online intercultural dialogue. In addition, our findings highlight the inclusion of work-exposure-related activities in culturally diverse environments (locally and abroad, online and offline) to improve global competence. Male students from ABM programs may benefit from training and workshops to improve intercultural communication. Finally, public and civil society organizations can subsidize students from lower-income households interested in foreign cultural exposure.

## Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## Ethics statement

Administrative clearance for ethical conduct was secured for the study from DLSU Department of Sociology and Behavioral Sciences. The participants provided their written informed consent to participate in this study. National data privacy policies were observed in collecting and handling the data.

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## Author contributions

JC: Writing – original draft, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. CL: Writing – review & editing, Validation.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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