
UNDERSTANDING ACADEMIC MISCONDUCT BEHAVIORS AMONG UNIVERSITY STUDENTS DURING THE COVID-19 REMOTE TEACHING AND LEARNING PHASE

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ABSTRACT

The COVID-19 pandemic has necessitated many higher educational institutions (HEIs) to switch to online learning. In situations rife with academic uncertainties, students and staff had to adjust to this new norm. In this study, we predict that religiosity, social presence, and computer-mediated communication will reduce academic misconduct behaviors. A cross-sectional survey was distributed among IIUM undergraduate students ($N = 469$). Findings indicate that religiosity reduced academic misconduct behaviors and mediated the relationship between social presence and misconduct behaviors. The implication of the study findings on social presence theory, and factors that may influence academic misconduct behaviors, is deliberated.

Keywords: *Academic misconduct behaviors, computer-mediated communication, online learning, religiosity, social presence.*

INTRODUCTION

As the COVID-19 pandemic spread globally from 2020 to 2021, it has a significant impact on Malaysian society, including in the higher education sector. Having faced with the reality of conducting online teaching and learning, many higher educational institutions (HEIs) were left with no choice but to switch to online teaching and learning due to concerns with social distancing and mandated quarantines. In a situation rife with academic uncertainties, both academic staff and students had to adjust to this new norm. International Islamic University Malaysia (IIUM) was no exception. Beginning March 2020, the university mandated the remote teaching and learning (RTL) phase as the Movement Control Order (MCO) was imposed.

Consequently, academic staff and students resorted to online classrooms to continue their teaching and learning. With the pandemic comes many challenges in adjusting to the new norm.

Part of the challenges of teaching and learning during the RTL phase is monitoring students' conduct in assessments, which can be more cumbersome to manage compared to face-to-face proctoring. Not surprisingly, studies have indicated that academic misconduct behaviors are on the rise during COVID-19 pandemic (Alessio & Messinger, 2021; Khaldoun et al., 2022; Roe, 2022). Academic misconduct is a global concern, and it covers a wide range of behaviors including plagiarism and assisting someone in cheating (Jurdi, et al., 2011). Researchers found that those with more lenient perception of academic dishonesty have certain personality traits; young, opportunistic, tolerant, and less religious (Rawwas et al., 2004). Thus, individual differences such as personality traits or spiritual-religious attitudes may influence students' tendency towards academic misconduct behaviors.

Further, environmental factors may provide opportunity for students to engage in academic dishonesty. For instance, academic dishonesty may occur when following online classes, due to reduced monitoring and lack of face-to-face interactions with course instructors and classmates. In comparing academic integrity in online courses compared to face-to-face classes, findings indicate that cheating occurred more frequently in online classes (Miller & Young-Jones, 2012). In a study by Wiley (n.d.) in the wake of the COVID-19 pandemic, with technology becoming more of a norm in teaching and assessments, problems with academic misconduct are becoming more pronounced. The study also suggests that interpersonal relationships formed online can reduce misconduct behaviors. The concept of being connected to others in online communities from the communication perspective is explained by the social presence theory.

In the social presence theory, computer-mediated interactions can be just as rich as face-to-face interactions, provided social presence is maintained (Short et al., 1976). Social presence is the degree to which participants in the online learning environment can present their personal characteristics, to the extent that their presence is perceived as 'real' to others in the online community (Garrison et al., 2009). When they can build personal connection with others in their online communities, students are less likely to engage in misconduct behaviors, as they feel a sense of belonging with this online community, experience collective community responsibility, and will resort to behaviors that promote group interest, including refusing to engage in misconduct behaviors, and preventing or reporting others from engaging in such behaviors.

Accordingly, this study aims to examine the main challenges faced by students during the RTL phase. Also, this study will identify predictors to academic misconduct behaviors during the RTL phase, including environmental factors (i.e., CMC use and social presence) as well as individual differences, (i.e., perceived religiosity). Perceived religiosity will also serve as a mediating variable in this study. The next section will discuss literature review related to the present study, including a summary of factors influencing academic misconduct behaviors, and the role of social presence in e-learning.

LITERATURE REVIEW

Factors Influencing Academic Misconduct Behaviors

Academic misconduct behaviors can include any types of dishonesty in the academic context. According to Pavela (1997), it includes cheating (i.e., taking advantage of unauthorized material in any academic exercises), fabrication (purposely falsifying without authorization in an academic exercise), facilitating academic dishonesty (attempting to aid others, whether on purpose or unintentionally), and plagiarism (purposely and knowingly using material or ideas of others as one's own in any academic exercise). Several studies examined academic misconduct behaviors and dishonesty among university students either in face-to-face or online classrooms. These studies targeted college or university students from various educational background, population, and cultures, such as from the United States (e.g., Alessio & Messinger, 2021; Mills, 2012; Owunwanne et al., 2010; Williams et al., 2012; Williams, 2018), Canada (Jurdi et al., 2011), Turkey (Akbulut et al., 2008), and Indonesia (Winardi et al., 2017; Rifani et al., 2021; Rizki et al., 2022).

Further, studies also examined academic dishonesty from the perspectives of both academic staff and students (e.g., Brimble & Stevenson-Clarke, 2005; Hard, et al., 2006; Roig & Ballew, 1994; Williams et al., 2012). What constitutes as academic dishonesty appear to be divergent for students and academic staff (Brimble & Stevenson-Clarke, 2005; Williams et al., 2012). Brimble and Stevenson-Clarke (2005) found that students have a more relaxed view on academic dishonesty; indicated by their lowered perceptions on the seriousness of academically dishonest behaviors, coupled with lower suggested penalties. A more recent study by Alessio and Messinger (2021) found that faculty tended to place a higher priority on the need to implement policies on using technology in assessments, to uphold academic integrity.

Studies also identify factors that influenced propensity to cheat, perception on academic dishonesty, or tendency to engage in academic dishonesty. In one Canadian study by Jurdi et al. (2012) found that those with stronger attachment to academic ethics, used deep learning strategies and perceived their academic ability as stronger had a stricter definition of what actions constitutes as academic dishonesty. Other studies looked at students' attitude towards religion as a predictor; Williams (2018) found that among American college students, religiosity was a significant and negative predictor to propensity to cheat. History with cheating also matters; one study found that those who have cheated will view it as significantly less serious and will be more likely to commit academic dishonesty in the future, compared to those who have not cheated (Williams et al., 2012). Finally, others have examined the effects of environmental factors on academic dishonesty; for instance, peer pressure has a positive relationship with intention to commit academic dishonesty (Winardi et al., 2017). Similarly, Saidin and Isa (2013) found that among many reasons, Malaysian trainee teachers cheated because "because everyone does it" and "peer influence". Individual differences and environmental factors can interact and determine outcomes related to academic dishonesty; for instance, integrity culture practiced by institution had more influence on the intention of students to cheat, specifically for less adjusted individuals (Kisamore, Stone and Jawahar, 2007).

Instructor characteristics and their interaction with students in the classroom can also influence a student's propensity to cheat or engage in academic dishonesty. One study found that social immediacy of class instructors and their social strength (i.e., perceived reputation), influenced whether a student would cheat on an exam or not (Harrison, 2018). When class

instructors have a high degree of social strength and immediacy, students are less likely to engage in cheating. Thus, how the instructor interacts with students in the classroom may influence their likelihood of engaging in academic dishonesty.

Findings appear to be mixed when comparing academic dishonesty in online or offline platforms. Some studies have suggested that student believed that cheating occurred more frequently online (Miller & Young-Jones, 2012) and that it's easier to cheat online (Alessio & Messinger, 2021; King et al., 2009; Miller & Young-Jones, 2012). This seemed to suggest that in online classrooms, as students feel more disconnected to others, they are more likely to engage in deceptive behaviors. The American study by Alessio and Messinger (2021) suggests that to uphold academic integrity, faculty should use proctoring software in online testing. On the other hand, Stuber-McEwen et al. (2009) found that cheating in online courses were less likely compared to face-to-face courses. These researchers suggest that cheating is less likely to occur as online classrooms as students can determine their own pace of learning, they are less likely to engage in 'panic cheating'. On the other hand, Watson and Sottile (2010) found that there is no significant difference between cheating in online or offline courses, and it is important to examine how social interaction in live classes occur, and that may influence decision making in cheating or not cheating. The next section will examine social presence in online learning.

SOCIAL PRESENCE AND ONLINE LEARNING

In examining the quality of the online learning experience, scholars have attempted to link social presence, which is the extent to which a person is perceived as 'real' in the mediated environment (Gunawadana & Zittle, 1997). Social presence was initially developed based on telecommunication literature. Short, et. al (1976) built the social presence theory by examining the social-psychological perspective of mediated communication from the viewpoint of social cues. Social presence is defined as "the degree of salience of other person in the interaction and the consequent salience of interpersonal relationships" (Short et al., 1976). Communication technology and media differs in their range of social presence, and this diversity will determine how individuals communicate in the online environment. Social presence is attributed to the capability of the medium in transmitting information about facial expressions and non-verbal cues. Communication media with video and audio capabilities, such as videoconferencing, would have a higher degree of social presence, compared to a text only medium, such as email. Thus, a communication medium characterized with a high level of social presence is perceived as sociable, warm, and personal (Lowenthal, 2010). On the other hand, a communication medium with a lower level of social presence is attributed as less personal.

Research on social presence have evolved from 1970s to the present time; while social presence was applied in telecommunication and computer-mediated communication, from 1990s onwards, it is being applied as a central concept in online learning (Lowenthal, 2010). In the present study, social presence in the online courses refers to a "students' sense of being and belonging in a course and the ability to interact with other students and an instructor" (Picciano, 2002). Social presence can be increased in online courses with greater and more diverse use of CMC tools (Perse, et al., 1992; Tu & McIsaac, 2002).

In online classrooms, a high degree social presence can lead to positive outcomes for students in terms of learning. In one study, Richardson and Swan (2003) found

that social presence of instructors and peers in online courses predicted 42% of the variability seen in perceived learning. Similarly, social presence can also dictate course satisfaction; several studies found a positive association between social presence and course satisfaction (Gunawardena & Zittle, 1997; Gunawardena, Lowe & Anderson, 1997; Richardson & Swan, 2003). Researchers also argue that the influence of social presence for learners depends on their goals; if they have high intentions to apply what they learn, high social presence in online courses would lead to more interaction, motivation, and satisfaction.

In the present study, consistent with the assumptions of social presence, we predict that students who use a wider range of CMC platforms are more engaged and interact more with other students and peers, and thus experience greater social presence, high belongingness to the online community, and are also less likely to engage in academic misconduct behaviors to achieve a better grade, as the enjoyable class experience reduces tendencies to engage deceptive behaviors such as cheating. Thus, the following hypotheses are proposed:

H1: CMC use is negatively related to academic misconduct behaviors.

H2: Social presence is negatively related to academic misconduct behaviors.

H3: CMC use is positively related to social presence.

Cheating behaviors can be attributed to attitude; some studies point out that students may have a more relaxed view on cheating, and what constitutes as cheating (i.e., Brimble & Stevenson-Clarke, 2005; Alessio & Messinger, 2021). However, having a strict attitude towards cheating may stem from individual religious values; religiosity may dictate how one forms attitude towards the importance of academic integrity and discourage them from engaging in unethical behaviors such as cheating. We predict that religiosity would subsequently deter academic misconduct behaviors and dishonesty, in line with previous studies (i.e., Herdian et al., 2021; Khan et al., 2019; Kholid et al., 2022; Ridwan et al., 2021; Williams, 2018; Onu et al., 2021; Rifani et al., 2021). Accordingly, the following hypothesis is suggested:

H4: Perceived religiosity is negatively related to academic misconduct behaviors.

Further, some studies have found a negative relationship between religiosity and media use. For example, one study found that religiosity has a negative impact on Internet use (Armfield & Holbert, 2008) while another study found that the more religious a person is, the less likely they are to view social media as an alternative to face-to-face interactions (Almenayes, 2014). These studies perhaps focus social media and the Internet that are used for entertainment purposes. On the other hand, others have found that the media can be used to enhance religious experience and beliefs. For example, in one study by Ehlebracht (2022), findings indicate that among adult social media users in Canada, their use of social media can promote or interact with their religious and spiritual belief. Accordingly, in the present study, we argue that for those who use technological platforms to interact positively with their peers and the course instructor, their use of CMC will reinforce their religious beliefs and attitudes based on the positive learning environment they experience. Thus, the following hypothesis is proposed:

H5: CMC use is positively related to perceived religiosity.

Next, although research linking social presence and religiosity is scant, we also argue that in the present study, when individuals experience warm, sociable, and positive interaction with others in online communities, this will enhance their religious and spiritual beliefs as well. As online teaching and learning during this RTL phase became the norm, face-to-face interactions have also reduced substantially. When students experience a supportive online learning environment created by social presence and feel belongingness in the online community with peers and their instructors, this will also enhance their commitment to religion in this period of high stress and uncertainty. Thus, the following hypothesis is suggested:

H6: Social presence is positively related to perceived religiosity.

Finally, two mediating relationships are proposed. In the presence of perceived religiosity, it is possible that the relationship between CMC use and academic misconduct behaviors will be significant. CMC use in online classrooms will reduce academic dishonesty when perceived religiosity is high. Also, in the presence of perceived religiosity, the relationship between social presence and academic dishonesty will be significant. In this study, as an intrinsic factor, we argue that perceived religiosity may play a stronger role in deterring academic misconduct behaviors, rather than just environmental factors (i.e., the use of CMC online classrooms and social presence). As such, the following two hypotheses are proposed:

H7: Perceived religiosity mediates the relationship between CMC use and academic misconduct behaviors.

H8: Perceived religiosity mediates the relationship between social presence and academic misconduct behaviors.

In summary, based on previous literature and the social presence theory, the conceptual framework is depicted in Figure 1.

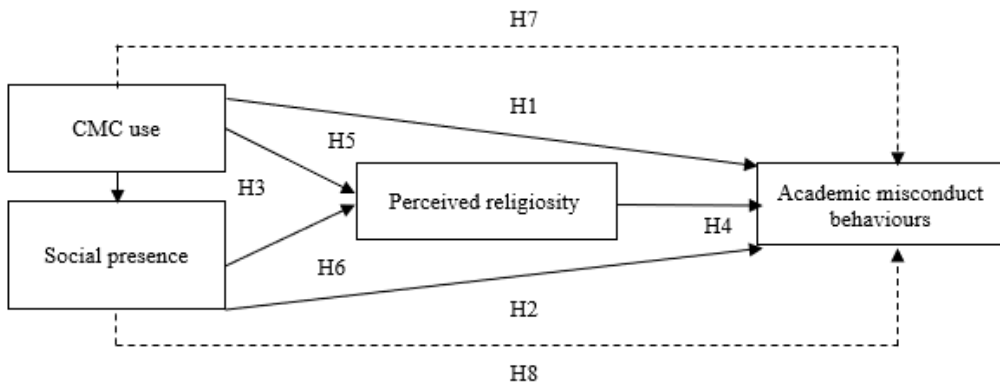


Figure 1. Conceptual framework depicting relationship between research variables.

METHODOLOGY

Sampling

The target respondents in this study are undergraduate students from three different Kulliyah in International Islamic University Malaysia (IIUM) who were actively registered to courses during the RTL phase. Three Kulliyah (faculties) were selected to compare how IIUM students and academic staff coped with different ways of conducting online teaching and learning during the Remote Teaching and Learning (RTL) phase in Semester 1, 2020/2021. Two Kulliyah represented Science-based faculties (i.e., Engineering and ICT) while the remaining Kulliyah represented a Social Science-based faculty (i.e., Islamic Revealed Knowledge and Human Sciences). Selection was made on the basis that each of these faculties used different online tools to conduct classes, and assessments were different based on the nature of the courses. We used convenience sampling to collect the data. Hair et al. (2019) established that to conduct data analysis using PLS-SEM, the sample should be ten times the study paths and this criterion was met in this study. The G-power software was used to estimate the minimum sample size required for the study based on the number of predictors (minimum sample size should be $N = 107$). This requirement was also met in this study.

Data Collection Procedures

An online survey questionnaire was constructed using Google form to collect data for the study. The data was collected from the target respondents from March to May 2021. Those who participated in the survey was compensated with extra credit. The respondents took 15-20 minutes to answer all items in the survey, and informed consent was obtained before they could proceed with the survey. Anonymity was ensured by storing any personal data in a separate file, and respondents were free to withdraw from the study at any time. Incomplete or duplicate responses were eliminated, and valid responses totaled up to 469.

Measures

In this study, academic dishonesty served as the dependent variable of the study, while CMC use, perceived religiosity, and social presence in online courses were the independent variables. CMC use is measured by examining frequency of using various CMC tools (e.g., social media, e-mail, video conferencing such as Google Meet/Zoom, Ita'Leem: the university official e-learning platform, Google Classrooms, Microsoft Teams, and mobile messaging applications, such as Telegram and WhatsApp) to communicate with their instructors and other students during the RTL phase. All items were measured on a 5-point Likert scale, with response items that ranged from 1 (Never) to 5 (Always).

Perceived religiosity is measured by adapting the scale created for religiosity for Muslims (Mohd Mahudin, Mohd Noor, Dzulkifli & Janon, 2016). The scale comprises of ten items, and uses a 5-point Likert scale, with response items that ranged from 1 (Strongly Disagree) to 5 (Strongly Agree). A sample item reads: "I avoid behaviors that will be punished in the Hereafter".

Social presence in online classes is measured by adopting a scale from previous research (Cobb, 2009). Social presence is the degree to which participants (i.e., instructors and students) can showcase their actual personality in the online community (i.e., online classes), thus, presenting themselves as 'real' to others (Garrison et al., 2009). This scale composes of 14

items and two items were reverse coded. Response items for this scale ranges from 1 (Strongly Disagree) to 5 (Strongly Agree). A sample item is as follows: “My lecturer(s) created a feeling of an online community in online classes”.

Finally, *academic misconduct behaviors* are measured on a 5-point Likert scale, with response items that ranges from 1(Never) to 5 (Very Often: more than 10 times). This scale consists of 16 items that were meant to capture frequency of engaging in behaviors that is associated with academic misconduct, such as copying information from websites without proper citations, and planned behavior of copying from another person’s paper or receiving unauthorized aid during an online exam. As with other measures, this scale was adapted from previous studies (Hard, et al., 2006). Other details pertaining to the reliability and validity of the scales are provided in the analysis for structural and measurement model.

Data analysis

The descriptive data for demographic background and main challenges during RTL was analyzed using SPSS. To test the hypotheses of the study, we used the partial least squares (PLS) modeling with the Smart PLS 3.3.3 version as the statistical tool to scrutinize the measurement and structural model. This technique does not require normality assumption, and cross-sectional survey research is usually not normally distributed (Chin et al., 2003).

FINDINGS

The respondents in this study were relatively young ($M = 21.68$, $SD = 2.05$) and more than half were females (62%). There were slightly more social sciences students (58%) compared to Engineering and IT students. During the RTL period, about half of the students were studying off campus, in Malaysia (49%), while the remaining students stayed on campus (31%) or followed online courses from their family homes, in their home countries outside of Malaysia (19%). Close to three quarters were good students with a CGPA of above 3.00 (63%), and slightly more than half had moderate academic workload of 15-18 credit hours during the RTL semester (54%), which is the average credit hours taken by IIUM students during non-RTL semesters. All students who participated in this study were Muslims.

Main Challenges with Online Teaching and Learning

Based on the descriptive data analysis, main challenges in online learning during the RTL phase include technical difficulties (18%), i.e., poor Internet connection or slow laptops, poor communication with course instructors and classmates (15%), lack of conducive learning environment at home (15%), heavy academic workload (10%) and lecturer’s approach to online teaching and learning (10%). Lecturer’s approach to online teaching and learning that were perceived as unhelpful included last-minute assignment of assessments and using only asynchronous tools in online classrooms. Others report experiencing issues with mental health (2%), or time management problems (7%) during the RTL phase, where inability to focus during online classes led to them being left behind on class lessons and unable to catch up with assessments given by instructors.

Measurement Model

The measurement model depicts the relationship between the constructs and the indicator variables. In assessing the measurement model, indicators with low factor loadings (i.e., values below 0.60) were removed (Gefen & Straub, 2005). Three items related to CMC use (i.e., CMC2, CMC3, CMC4), four items for social presence (SP1, SP9, SP10 and SP11), and four items for academic dishonesty (i.e., AMB 4, AMB10, AMB13, and AMB14) were dropped due to low loadings. To test the structural model, two components, specifically composite reliability, and Cronbach’s alpha, were scrutinized to examine reliability. First, the composite reliability was examined. The acceptable cut-off value is .70 (Ringle et al., 2018), and this criterion was met. Therefore, all the latent constructs of the model achieved adequate composite reliability. Also, the Cronbach’s alpha values for all constructs in the present research, are beyond the threshold value of .70 (Chin, 2010). These outcomes reflect acceptable reliabilities of the latent constructs, implying their fitness for further analysis. Complete results are depicted in Table 1.

Table 1. Factor loadings, reliability, and validity

Items	Loadings	CA	CR	AVE
<i>CMC Use (CMC)</i>		0.76	0.84	0.58
CMC1 (WhatsApp)	0.79			
CMC5 (Ita’Leem)	0.68			
CMC6 (Video conferencing)	0.86			
CMC7 (Google Classrooms)	0.79			
Social Presence (SP)		0.90	0.92	0.54
SP2	0.63			
SP3	0.75			
SP4	0.77			
SP5	0.76			
SP6	0.81			
SP7	0.74			
SP8	0.69			
SP12	0.73			
SP13	0.72			
SP14	0.69			
Perceived religiosity (PR)		0.93	0.94	0.62
PR1	0.79			
PR2	0.78			
PR3	0.76			
PR4	0.75			
PR5	0.79			

PR6	0.81			
PR7	0.74			
PR8	0.84			
PR9	0.77			
PR10	0.82			
Academic misconduct behaviours (AMB)		0.92	0.93	0.53
AMB1	0.79			
AMB2	0.73			
AMB3	0.71			
AMB5	0.75			
AMB6	0.72			
AMB7	0.79			
AMB8	0.77			
AMB9	0.71			
AMB11	0.73			
AMB12	0.68			
AMB15	0.66			
AMB16	0.73			

Note: CA = Cronbach's alpha, CR = Composite reliability; AVE = Average Variance Extracted

Next, convergent validity was examined to analyze the measurement model. The average variance extracted (AVE) and the heterotrait-monotrait (HTMT) ratio procedure were obtained for the convergent validity assessment. Based on suggestions by Ringle et al. (2018), the threshold for the AVE is .50, and this was met. Thus, the convergent validity for the constructs in the study was established. To assess discriminant validity, the HTMT ratio procedure was used. As recommended by Henseler et al. (2015), in establishing discriminant validity, the most conservative threshold values of the HTMT ratio should be less than or equal to .90. All the HTMT values in this study were well below the threshold value of .90, demonstrating that discriminant validity was attained (refer to Table 2).

Table 2. Discriminant validity (HTMT)

Variables	1	2	3	4
AMB				
CMC	0.108			
PR	0.164	0.244		
SP	0.088	0.239	0.398	

Note: AMB = academic misconduct behaviors, CMC = computer mediated communication use, PR = perceived religiosity, SP = social presence

Structural Model

Having obtained adequate reliability and validity, the next step of the analysis is to test the hypotheses of the study based on the structural model. As suggested by Hair et al. (2017) and Cain et al. (2017) we assessed the multivariate skewness and kurtosis. The results showed that the data we have collected was not multivariate normal, based on Mardia’s multivariate skewness ($\beta = 5.235, p < 0.01$) and Mardia’s multivariate kurtosis ($\beta = 64.76, p < 0.01$) values. Therefore, in line with steps established by Hair et al. (2019), the path coefficients, the standard errors, *t*-values, and *p*-values in the structural model are reported using a sample resample of 5,000 bootstrapping procedures. The structural model displays the relationships (paths) among the constructs of the proposed study model. The model’s standardized path values, *t*-values, standard deviation, confidence intervals, effect sizes, and *p*-values are displayed in Table 3.

First, we tested the effects of three predictors on academic misconduct behavior; the adjusted r^2 value for the three exogenous constructs (i.e., perceived religiosity, CMC use, and social presence) explains only 3% of the variance in academic misconduct behavior ($Q^2 = 0.01$). CMC use ($\beta = -0.034, p = 0.67$) and social presence ($\beta = -0.01, p = 0.47$) did not predict AMB, although it was in the direction of the hypothesized relationship. Therefore, H1 and H2 was not supported. Further, as predicted in H3, CMC use was positively related to social presence ($\beta = 0.213, p < 0.01$). Next, perceived religiosity ($\beta = -0.154, p < 0.05$) was negatively related to AMB. Thus, H4 was also supported. Next, CMC use ($\beta = 0.147, p < 0.01$) and social presence ($\beta = 0.337, p < 0.01$) both positively predicted perceived religiosity, and therefore supporting H5 and H6. Both constructs explain 16% of the variance in PR ($Q^2 = 0.09$).

Table 3. Hypothesis testing direct effects

Hypothesis	Path Coefficient	SD	t-value	p-value	BCI LL	BCI UL	f ²	VIF
H1: CMC > AMB	-0.03	0.05	0.67	0.25	-0.11	0.06	0.001	1.073
H2: SP > AMB	-0.01	0.07	0.09	0.47	-0.12	0.10	0.000	1.182
H3: CMC > SP	0.21	0.05	4.10	<.001	0.11	0.29	0.048	1.000
H4: PR > AMB	-0.15	0.06	2.59	.010	-0.23	-0.03	0.021	1.185
H5: CMC > PR	0.15	0.05	2.96	<.001	0.05	0.22	0.024	1.048
H6: SP > PR	0.34	0.05	6.381	<.001	0.25	0.42	0.129	1.048

Note: We used 95% confidence interval with a bootstrapping of 5,000

Mediation Analyses

To test the mediating analysis, we followed to steps suggested by Preacher and Hayes (2004; 2008) by bootstrapping the indirect effect. H7 tested the mediating role of PR in the relationship between CMC and AMB. Results are significant CMC → PR → AMB ($\beta = -0.05, p = .001$). The confidence bias interval corrected 95% did not show any intervals straddling a zero, and therefore, confirming our findings. Thus, H7 is accepted. Finally, H8 tested the mediating role of PR in the relationship between SP and AMB, and the relationship is significant. Results are significant; SP → PR → AMB ($\beta = -0.05, p = .010$). Further, the mediating analysis indicates that there is no interval straddling a zero. Therefore, H8 is accepted. Table 4 displays specific details associated with the mediation analyses.

Table 4. Hypotheses testing indirect effects

Hypothesis	Path Coefficient	SD	t-value	p-value	BCI LL	BCI UL
H7: CMC > PR > AMB	-0.02	0.01	1.72	0.04	-0.05	-0.01
H8: SP > PR > AMB	-0.05	0.02	2.43	0.01	-0.09	-0.01

Note: We used 95% confidence interval with a bootstrapping of 5,000

DISCUSSION AND CONCLUSION

A main goal of this study was to examine factors that influenced university students’ academic misconduct behaviors in the online teaching and learning phase that occurred during the COVID-19 pandemic. During this period, all teaching and learning activities occurred online including assessments. In this study, eight hypotheses were proposed, including two mediating hypotheses. Based on the findings, H1 and H2 was not supported, where CMC use and social presence did not predict academic misconduct behaviors. On the other hand, a significant positive relationship was established between CMC use and social presence (H3) as well as a significant negative relationship between religiosity and academic misconduct behaviors (H4). Also, significant relationships were established between social presence and perceived religiosity (H5) and between CMC use and perceived religiosity (H6). Two significant mediating relationship was established, where perceived religiosity mediated both the relationship between CMC use and academic misconduct behaviors (H7), and between social presence and academic misconduct behaviors (H8). Discussions related to results of the study are discussed in the following paragraphs.

Consistent with the prediction of social presence theory and previous research (Perse, et al., 1992; Tu & McIsaac, 2002), regular CMC use was able to predict higher social presence (H3). Therefore, course instructors who used multiple platforms and tools in the teaching and learning processes can increase their social presence by creating a more interactive, warm, and personalized online learning environment with their students. Therefore, it is recommended for those who incorporate blended learning in their classes to employ frequent and varied use of CMC to increase social presence in online classrooms. For example, course instructors could utilize both synchronous (i.e., video conferencing and mobile messaging apps) and asynchronous channels of communication (i.e., emails), regardless of the type of course (science or non-science). This data was also supported by the responses given in the open-ended items for main challenges faced during RTL, where students found it difficult to follow lectures and class assessments when only asynchronous tools was used. As different tools vary in their level of media richness (see Daft & Lengel, 1986) and ability to convey social presence, course instructors who utilize different types of tools to convey information and to increase engagement and interactivity, and hence can establish their presence in the classroom, as more than just an online profile. The use of video conferencing through Zoom or Microsoft Teams for real-time class sessions, for example, may allow students to get to know their instructors personally, by viewing both their verbal and non-verbal cues that moves beyond just seeing a photo behind their online profile. It cannot substitute the richness of face-to-face communication, but it is more interactive and lively compared to asynchronous communication (i.e., emails, text-only mobile messages, or online discussion boards).

Social presence and regular CMC use, however, did not deter students from engaging in academic misconduct behaviors (H1 & H2). Thus, even when they find their course instructors to be engaging and warm online, and experience belongingness to the class, with a variety of CMC tools used frequently in class to encourage communication between course instructors and students, this does not appear to prevent students from cheating in course assessments or other types of academic dishonesty. Thus, although regular and interactive communication using CMC in online classrooms can be conducive for online learning, it did not deter academic misconduct behaviors directly. Future studies could examine directly if regular use of proctoring software and tools (i.e., plagiarism software, webcams, and lockdown browsers) to monitor student's assessments online can effectively reduce academic misconduct behaviors in online classrooms. This is in line with a White paper report by Wiley indicating that during the COVID-19 pandemic, 93% of instructors report that students are more likely to cheat online rather than face-to-face in their 2020 survey (Wiley, n.d.). The report further suggests using high social presence tools such as Zoom and webcams to monitor students while they complete their assessments, to reduce cheating and other types of academic dishonesty.

What appears to be more effective is emphasizing on integrity and moral values in the classroom and highlighting those elements to students. Those who perceive themselves as religious were less likely to engage in academic misconduct behaviors (H4). The result is parallel to findings from several previous studies (i.e., Khan et al., 2019; Muamar et al., 2022; Ridwan et al., 2021; Rifani et al., 2021; Williams, 2018; Onu et al., 2021) indicating significant negative relationships between religiosity and outcomes related to academic misconduct behaviors or academic dishonesty, such as attitude towards cheating and propensity to cheat in the future.

Also, the ability to take advantage of different CMC platforms in the classrooms was able to decrease academic misconduct behaviors when perceived religiosity is present (H7). Thus, course instructors could emphasize on the appropriate social norms of using communication technology in the classroom to discourage misconduct behaviors in the classroom. This has also been reiterated in a previous study, where the authors argue that to deter or reduce academic dishonesty, instructors should utilize class time to communicate clearly and explicitly on academic integrity principles and concepts (Williams et al., 2012). For example, while it is appropriate to use an online database to produce a quality research paper, it is unethical to copy and paste materials from the Internet without proper citation. Perhaps some students are also ignorant as to what behaviors constitute as academic misconduct in online classrooms. Further, to dissuade students from engaging in misconduct behaviors, course instructors, university administrators and perhaps even peers, need to work together to create a culture of academic integrity in the institution by emphasizing on academic integrity and honesty as a religious duty in the classroom. Perhaps previous policies implemented prior to COVID-19 concerning student conduct in the teaching and learning process (i.e., assessments) need to be updated to reflect policies that cater to online learning. This is important input for university management in facing challenges of online teaching and learning, where morality and character development must be just as important as intellectual and academic pursuits.

Therefore, higher educational institutions should also play a role in discouraging cheating behaviors, such as creating awareness to students on the academic integrity culture that is practiced in the HEIs. If these policies on academic dishonesty (i.e., what constitutes as 'cheating' and outlining serious repercussions for engaging in academic dishonesty or

misconduct behaviors) are disseminated and made widely available not only to administrators and academic staff, but also to students, perhaps academic dishonesty could be reduced or managed more efficiently. Others even suggest re-examining academic policies with regards to academic misconduct, considering divergent views on academic dishonesty, where students are found to be more tolerant of academic dishonesty compared to faculty (Brimble & Stevenson-Clarke, 2005). After making a concerted effort to increase awareness among staff and students, implementation of these academic integrity policies needs to be reinforced. As mentioned in a previous study (Brimble & Stevenson-Clarke (2005), students tend to perceive a lighter punishment for cheating behaviors, indicating their lack of seriousness in understanding, and practicing academic integrity in the classrooms, whether online or offline.

Finally, religiosity mediated the relationship between social presence and academic misconduct behaviors (H8). Thus, not only does perceived religiosity directly deters student from engaging in academic misconduct behaviors, but when students engage with the instructor and peers in online classes and perceive a high degree of social presence in their online class community, they are less likely to engage in academic misconduct behaviors, when their commitment in religious beliefs and values are present. Consequently, if course instructors wish to uphold academic integrity in online classrooms, they should engage more interactively with students in the classroom by emphasizing more on belongingness to the online community, along with highlighting the importance of academic integrity and honesty. Based on the findings, social presence is only effective in dissuading cheating, when students themselves are cognizant of their religious duties as a Muslim and apply those values in their daily life. Future research could also perhaps examine this further by focusing on the interaction between religious behaviors or involvement in religious activities (i.e., prayers, fasting etc.) and social presence in deterring students from engaging in academic dishonesty during online learning. Also, as this research was undertaken in an international Islamic university that emphasizes on Islamic values in its education philosophy, it would be interesting to compare these findings with other private or public universities in Malaysia that may not share similar philosophies, and to examine if religious values have a universal effect on academic misconduct behaviors.

All studies are not without limitation; in this study what appears to be a salient issue is perhaps the underreporting of academic misconduct behaviors, which could be attributed to social desirability bias, which is a response bias among survey respondents where they tend to answer in a manner that will be viewed favorably by others (see Nederhof, 1985). Thus, as misconduct behaviors such as cheating and plagiarism violates social norms in the classroom setting, perhaps respondents of the study feel compelled to underreport such behaviors. Future research could mitigate this issue by examining factors that contribute to university students' perception of academic dishonesty from others, and whether this is parallel to their own behavior.

As technologies becomes more sophisticated and interactive, blended learning, online classroom, and distance learning may become more of a trend in HEIs post pandemic, as learning is no longer constrained by geographical distance and time or space limitations. Thus, it is very important that university administrators, course instructors and curriculum developers to adjust to online learning and consider the impact of academic misconduct behaviors in the online classrooms by managing challenges that comes with online teaching and learning, including proctoring of online course assessments by using high social presence

CMC tools, while still ensuring the effectiveness and quality of course content and course delivery.

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