

## Immediacy Factors as Solutions to Email Satisfactory Communication Among South-East Nigerian Academic Staff: Structural Equation Modeling and Preliminary Findings

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### ABSTRACT

Notwithstanding the evidence of utilizing email among Nigerian academic staff as shown in the previous studies, a recent study demonstrated that they witnessed dissatisfactory communication via email as text-based communication medium. Therefore, the aim of our study was to evaluate if immediacy factors might influence their email satisfactory communication since these factors have been ascertained in the past studies as predictors to satisfactory communications in other asynchronous virtual communications. The respondents' email satisfactory communication levels were further examined in the study for finding if they also contributed to their email dissatisfactory communication. Hence, a quantitative research method was conducted because the study required both descriptive and inferential studies for the aim of inferring the outcomes to the targeted population. Consequently, our key findings showed that more than half of the respondents' email satisfactory communication level was not a high one. Additionally, our findings showed that the three immediacy factors which comprised prompt feedback, approachability and similar personality had direct effects on email satisfactory communication. However, similar personality factor contributed most to email satisfactory communication. Therefore, we recommend that they should consider these three immediacy factors, especially the similar personality if they aim to achieve email satisfactory communication. Our findings further explicitly contributed knowledge to asynchronous computer-mediated media satisfactory communication.

**Keywords:** *Immediacy factors, satisfactory communication, email usage, asynchronous computer-mediated communications, South-East Nigerian academic staff.*

### INTRODUCTION

In the recent years, studies that have explored on email usage among Nigerian academic staff seemed to have less concern towards evaluating whether immediacy factors might influence email satisfactory communication among academic staff (Bankole, 2013; Tiwari 2016). Thus, our study aims to evaluate the effects of immediacy factors on email satisfactory communication. Communication is globally used by every organization for accomplishing the daily activities, nonetheless, the usage is further classified into virtual mediated and non-virtual mediated types (Deuze, 2017). The virtual mediated communications are the interactions between human beings which are mediated by computers via the internet (Herring & Androustopoulos, 2015). Virtual communications are further categorized into synchronous and asynchronous kinds. Synchronous virtual communications are all forms of virtual communications that simultaneously take place among communicating entities, such as video conferencing calls, telephone conversations and instant

messenger, whereas asynchronous virtual communications are the types that rarely take place among communicating partners at the real-time and these included email, twitter, online discussion forums, telephone short message services and other similar ones (Giesbers, Rienties, Tempelaar & Gijsselaers, 2014).

Therefore, this study precisely focused on email communication as one of the predominant asynchronous virtual mediated communications. Email is universally used as a means of communication and for disseminating information (Holz, Amann, Mehani, Wachs, & Kaafar, 2015). The relevance of email usage in this contemporary era cannot be underemphasized. Thus, statistics have shown that over 3.9 billion people globally have email accounts. In other words, the numbers of email active users are virtually over one-third of the global population (Email statistics report-Radicati Group, 2019-2023). Email is also used for accomplishing tasks in both organizations and institutions of learning (Alkahtani, Dawson & Lock, 2015). Haddouch (2017) further demonstrated that email is used for retrieving stock market-related information, transactions updates, bill alerts, adverts, keeping in touch with colleagues, friends and family members.

The recent study also stated it is the most medium of communication used by Malaysian private and public universities' non-academic staff for communications (Mahomed & Shah, 2015). Manca and Ranieri (2016) further identified that academic staff used email for accomplishing personal events and for professionally linking their colleagues. Whereas Haddouch (2017) found that email is used by academic staff, universities' managers and directors for communicating with faculties; departments; contacting other universities cum governments on scholarships related-issues and research undertakings. Even among Nigerian academic staff, email, has been identified as the greatest internet products used for discharging their various duties due to the low cost and ability to dispatch messages to many at the same time (Bankole, 2013; Tiwari, 2016 ). A subsequent study conducted in Nigeria stated that women academics are also using virtual media such as email for information access, virtual communications and designing course outlines (Olatokun, 2017). Cecchinato, Cox and Bird (2015) further affirmed that academic staff are using email for both personal and work-related purposes.

However, the current issue was that email has been critiqued for being lean asynchronous virtual communication medium restricted to only written form, therefore, it is said to lack human contacts, verbal and non-verbal clues needed for enhancing interpersonal relationships and satisfactory communication (Haddouch, 2017). An email has been also faulted by Nigerian academic staff to be among ineffective communication media for organizing and motivating one another (Mukoroi, 2013). Thus, the scholar explicitly pinpointed that "in recent times, Nigerian educational institutions have experienced disharmony, instability and other forms of industrial conflict. This situation has resulted in low productivity in schools. Most of these problems have been as a result of poor communication" (Mukoroi, 2013).

Therefore, the aim of this empirical study is to evaluate if immediacy factors might influence email satisfactory communication for enhancing South-East Nigerian academic staff productivities in public universities. Hence, our research is guided by the following research questions:

1. What are the levels of email satisfactory communication among South-East Nigerian academic staff?
2. Are there direct effects of immediacy factors, comprising prompt feedback, approachability and similar personality on email satisfactory communication among the respondents?
3. What is the immediacy factor that most contributed to email satisfactory communication among the respondents?

## LITERATURE REVIEW

### *Related Theory of the Study*

This study was guided by social presence theory (SPT), developed by (Short, Williams & Christie, 1976). The theory was defined by Short et al. (1976) as the extent of acknowledging the presence of communicating entities and the subsequent prominence of interpersonal connections. Whereas Gunawardena and Zittle(1995); and Tu (2001) refined social presence theory as the extent of perceiving the real presence of communicating entities on virtual interactions. Subsequent scholars demonstrated it to be a theory that has elements capable of substituting social cues in the real absence of communicating entities on virtual communications towards improving satisfactory communications (Sallnäs, 2005 & Tu, 2001).

Thus, the theory is explicitly used for predicting satisfactory communications on synchronous and asynchronous communication technologies related- studies. Therefore, previous scholars who have utilized the theory in similar studies have established various factors that were deemed able to influencing communication satisfaction on virtual media. In line with this, Swan and Shih (2005) identified users' experience as one of the predictors capable of influencing satisfactory communication via the online course discussion forum. Types of a task performed by individuals have been also presented as factors influencing satisfactory communication on computer-mediated medium (Weinel, Bannert, Zumbach, Hoppe & Malzahn, 2011). While Kim, Kwon and Cho (2011) conceptualized shared attention, open communication, emotional connectedness and a mutual sense of community as other predictors to satisfactory communication via online distant learning program. Similarly, Garrison (2011) found affective responses, open communication responses and cohesive responses as predictors to achieving satisfactory communication from electronic learning forum.

Savidou (2013) further demonstrated that integrated sensory, affective gesture and cognitive purpose were factors capable of influencing satisfactory communication via online interaction medium. However, subsequent scholars who engaged on other virtual communications such as virtual learning, unanimously found immediacy concept, which emanated from Mehrabian (1971) as one of the key elements of social presence theory and it was further integrated in the theory as one of the elements (Cui, Lockee & Meng, 2013). Moreover, Walter, Ortbach and Niehvas (2015) found from their researched work on the special effects of social presence that feedback was one of the effective immediacy scopes that could affect satisfactory communication on a synchronous computer-mediated communication channels. Nevertheless, Chang and Hung (2016) explicitly identified the social presence of both communicating individuals as other salient predictors towards achieving satisfactory communication from social networking sites' point of views.

Whereas self-disclosure of both communicating entities was subsequently conceptualized by Kim and Song (2016) as an element that could enhance parasocial interactions on tweet site communications. Consequently, our study would explicitly explore the immediacy factors comprising prompt feedback since the previous scholars only examined feedback but not the prompt one. Furthermore, approachability and similar personality are other immediacy scopes that would be evaluated in our study. Therefore, we focused on these three immediacy factors towards evaluating if they might influence email satisfactory communication since previous scholars such as Asiri (2013) with Lee and Lee (2014) have earlier identified them as immediacy dimensions capable of influencing satisfactory communication on other virtual media. Additionally, we would empirically evaluate them via structural equation modelling (SEM-AMOS) software. Therefore, the subsequent review sections would explore the findings of the previous studies that have earlier examined immediacy factors and communication satisfaction.

### *Communication Satisfaction*

Communication satisfaction is one of the elements of social presence theory used in our study. It is contextually defined as the total attitudes or emotional state surrounding factors that may affect a user's evaluation in terms of responses one receives while communicating via email (Iriani, 2006). However, Down and Hazen (1977) who invented communication satisfaction factor, conceptualized it into nine dimensions and these were communication climate, media quality, horizontal and informal communication, organizational perspective, communication with subordinates, personal feedback, organizational integrations; and communication with supervisors. Hecht (1978), who was also one of the pioneers of the concept further established psychological adjustment and the organizational environment as its predictors. Whereas Jacobs and Yu and Chavez (2016) found internal dialogues and interior integration as other predictors of communication satisfaction, nevertheless interior integration was identified as the paramount factor that propelled satisfactory communication among employees.

A subsequent study found organizational perspective, interactivity, interpersonal development and information-rich approach as factors positively impelling satisfactory communication, nonetheless, the speedy and efficiency of the media were also identified as crucial factors towards achieving effective communications (Stones, Deadrick, Lukazewski & Johnson, 2015). While from the asynchronous virtual technology communication settings, Ogara, Koh and Prybutok (2014) established that users' experiences, social presence and media richness were other positive factors influencing satisfactory communication. While Andre, Syed Zulkarnain and Asiah (2018) proposed that ICT facilities' usage zeal, proficiency of ICT knowledge and urge for using ICT in attaining quality learning processes were the factors that triggered academic staff towards improvising the quality of learning. Gutierrez-Santiuste and Gallego-Arrufat (2015) further outlined other factors which comprised quantity, the content of interactions, cognitive component and social impacts as predictors enhancing satisfactory communication on asynchronous computer-mediated communications. Mohd Azul, Ali, Mohd Nor Shahizan and Hasrul (2016) contrarily posited that interactivities, usability and ease of use were the basic factors that propelled online satisfactory communication via the information management system. Therefore, these factors were deemed vital in enhancing virtual satisfactory communication. A study also illustrated that internet availability, the speed of

internet and unlimited access to internet contents as the predictors to ICT satisfactory usage and frequencies (Hazita et al., 2014). Whereas, Hamedi and Samira (2015) found shared identities and social attention as the factors that influenced virtual communications towards achieving Facebook usage satisfaction among Malaysian undergraduates. Hence, our study will adapt some of the items of the construct's pioneers and also adopt the items of scholars who have done similar studies for measuring communication satisfaction.

### *Immediacy Factors*

Immediacy construct was another variable adopted from the social presence theory that inspired our study. It is defined as verbal and non-behaviors that assist in minimizing the psychological and physical distance among communicating entities on asynchronous virtual communication towards reaching communication satisfaction (Baker & Oswald, 2010). Since the inclusion of immediacy concept in the social presence theory, various factors have been established as dimensions of immediacy capable of influencing satisfactory communication on virtual media. In reference to this, Walkem (2014) pointed out that prompt feedback was one of the dimensions of immediacy. The scholar further described that satisfactory communication is achieved when users of asynchronous computer-mediated media recognize that it is their personal and professional duties to regularly check their email for apt replies and provide precisely; and appropriate information.

Moreover, past study equally observed that prompt feedback on asynchronous virtual communications could be instigated by the level of cognitive engagements of the users towards achieving immediate effect (Guo, Chen, Lei, & Wen, 2014). These scholars further stated that facilitating feedback helps to bring about cognitive engagements towards enhancing the immediacy effect for fulfilled communications. Additionally, the scholars' study outcomes pointed out that engaging on certain types of feedback approaches such as providing promising information and requesting for thought-provoking questions as the motivators of prompt feedback towards achieving communication satisfaction. Congruently, Dixson, Greenwell, Rogers-Stacy, Weister and Lauer (2017) found nonverbal behaviors like message frequencies and types of speedy feedbacks as determinants of prompt feedback for satisfactory communications on asynchronous virtual channels.

Another study did by McGuire (2016) on asynchronous online class interaction scenario, also illustrated that the following strategies which included refined passionate attitude, acknowledging feedback, controlling dialogues and relevance of the issues at hands as predictors that might enhance social presence and promptness for satisfactory communication. Approachability has been also conceptualized as another scope of immediacy concept that might influence satisfactory communications on asynchronous virtual communication media. Approachability as contextually used is defined as the manners by which written or text-based communications are converged before sending them to communicating entities which may help in instigating immediate result for satisfactory communication on communication technologies (Brooks & Young, 2016). Thus, these scholars projected that approachability comprised the ability to show receptiveness, encouragement and welcoming attitudes showed to communicating entities on computer-mediated communications.

Pang, Shin, Lew and Walther (2018) also hypothesized positive relationships between approachability on asynchronous computer-mediated media and satisfactory communication from the study they conducted among organizations' employees. The positive relationships found in the study were the consequences of cultivating, intensifying and incorporating bonds among virtual communicating entities. Similarly, research findings from instructors and students online learning demonstrated a positive relationship between approachability and satisfactory communication (Bhagat, Wu & Chang, 2016). The outcome of the study additionally illustrated that different traits displayed by individuals on asynchronous virtual media could either positively influence satisfactory interaction or mar it.

Sarapin and Morris (2015) further posited a positive medium-sized effect relationship between approachability and satisfactory communication from the study they conducted on Facebook among professors and their students. Contrarily, Lengacher (2015) demonstrated a negative relationship between approachability and satisfactory communication on computer-mediated communication technologies. Therefore, the outcome of the study implied that approachability on virtual communication technologies has no effects on satisfactory communication.

Similar personality was another immediacy dimension established by previous scholars as a predictor of satisfactory communication on asynchronous virtual media. Similar personality as used in the study is defined as the mutual feelings and behaviours that will help to enhance immediate result towards achieving satisfactory communication on asynchronous computer-mediated communications. However, Thibaut (2017) widely defined personality as accommodating individual compatible and incompatible differences. Whereas, Lee and Lee (2014) defined a similar personality as accepting numerous parts of individuals' behaviours which are collectively shared as a whole. Therefore, the study's contextual definition was in line with the one defined by Lee and Lee (2014). Consequently, previous scholars who have researched on related-studies such as online learning setting, hypothesized that similar personality has a significant effect on synchronous virtual media satisfactory communication (Wu, Chen & Yang, 2016).

Smits and Voogt (2017) similarly established a high association between related online personality and satisfactory communication from asynchronous learning settings. The study's findings also indicated that mutually acknowledging the comparative lengthen and well elucidated written contents would propel satisfactory communication among asynchronous virtual users. Carneiro, Martinho, Marreiros and Novais, (2015) further presented a correlation between related-personality and satisfactory communication from agents' perspective group decision-making scenario. Therefore, this study' findings implied that communicating entities who have related-traits would impel satisfactory conversations. However, Xiao and Huang (2016) refuted this by demonstrating that it is personality quality that influences satisfactory communication on asynchronous conversations and must not be a similar one, especially in the midst of intercultural communicating entities. Thus, our study intends to evaluate the effects of the three immediacy factors, which comprised prompt feedback, approachability and similar personality on email satisfactory communication.

### *Statement of the Hypotheses*

Incongruent with social presence theory variables' reviews and conceptual framework of this study as shown in Figure 1, the researchers came up with these hypotheses:

H1a1: There is a direct effect of prompt feedback on email satisfactory communication.

H1b: There is a direct effect of approachability on email satisfactory communication.

H1c: There is a direct effect of similar personality on email satisfactory communication.

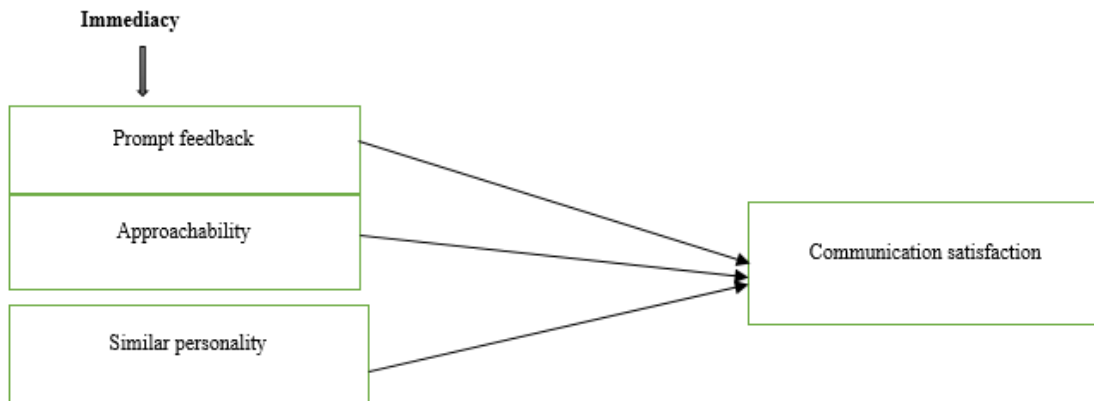


Figure 1: Conceptual Framework

### METHODOLOGY

This section comprised the research design; location and population of the study; sampling size and sampling technique, actual proportionate sampling procedures; measurement of the variables and operationalization of the variables; pilot /actual study reliabilities and construct validities; data collection and analysis.

#### *Research Design*

In line with the purpose of our study, which was to evaluate the direct effects of immediacy factors on email satisfactory communication and variables verifications through theory, quantitative research method was deemed suitable for the study (Punch, 2013). Therefore, for obtaining data in quantitative research, a survey questionnaire was used and gathered data on the opinions and characteristics of the respondents (Edwards, 1997).

#### *Location and Population of the Study*

South-East Nigeria is the location of our study. Therefore, it focused on public universities within this location. This location also comprised 5 states which are: Abia, Anambra, Ebonyi, Enugu and Imo. So, in the process of data collection, one public university was at least randomly selected from each of these states. It was done because each of the 5 states has 2 public universities and that comprised state and federal universities. Therefore, 3 federal and 3 state universities were eventually randomly selected. Thus, for our study, a total of 6 public universities were selected. However, the targeted population comprised 7,160 numbers of academic staff in these 6 selected public universities.

### *Sample Size and Sampling Technique*

Krejcie and Morgan table (1970) was used and determined the sample size of the study from the targeted population since every member in 7,160 total population has equal right to being selected. We subsequently determined 364 as the actual sample size of the study. However, the sample size was later increased by 23% for the purpose of observing the statistical principles which stated that the larger the sample size, the smaller errors it generates for better results (Maleske, 1995). Therefore, 83 more questionnaires were added to the 364 actual determining sample size and that made it 447 numbers of questionnaires shared during the data collection.

Nonetheless, 398 questionnaires were eventually regained; whereas 49 copies were unrecovered. Then among the 398 recovered questionnaires, 35 copies were not completely filled. Hence 363 was the actual sample size finally used in the study. In terms of sampling techniques, probability and multistage sampling techniques were used. They were used to avoid violating proper representation of the sample size of the study and for minimizing sampling errors (Creswell, 2017). Furthermore, a multistage probability which comprised cluster and simple samplings were used because South-East Nigeria has 10 public universities but we did not cover all of them because of limited resources.

Therefore, we first assigned clusters to the 10 universities, out of the 10 clusters, 6 public universities were randomly selected. Subsequently, we also assigned clusters to the faculties within the 6 public universities and some faculties were randomly chosen. We further assigned clusters to the departments within the chosen faculties and some of the departments were equally randomly selected before the questionnaires were simply shared among the academic staff within those chosen departments. Another reason that made us combine cluster and simple random samplings was the inability of getting access to the compiled names of all the academic staff in the 6 public universities.

### *Actual Sample Size Used for the Study*

Since multistage probability was used and sampled the questionnaires, it first went through clustering by faculties and departments according to the proportionate numbers of academic staff in each of the 6 public universities. The actual numbers of questionnaires shared among these universities were further proportionately determined by the numbers of academic staff in each of the universities. Proportionate sharing of the questionnaires was applied because some universities have higher numbers of academic staff than others according to the data in Figure 2.



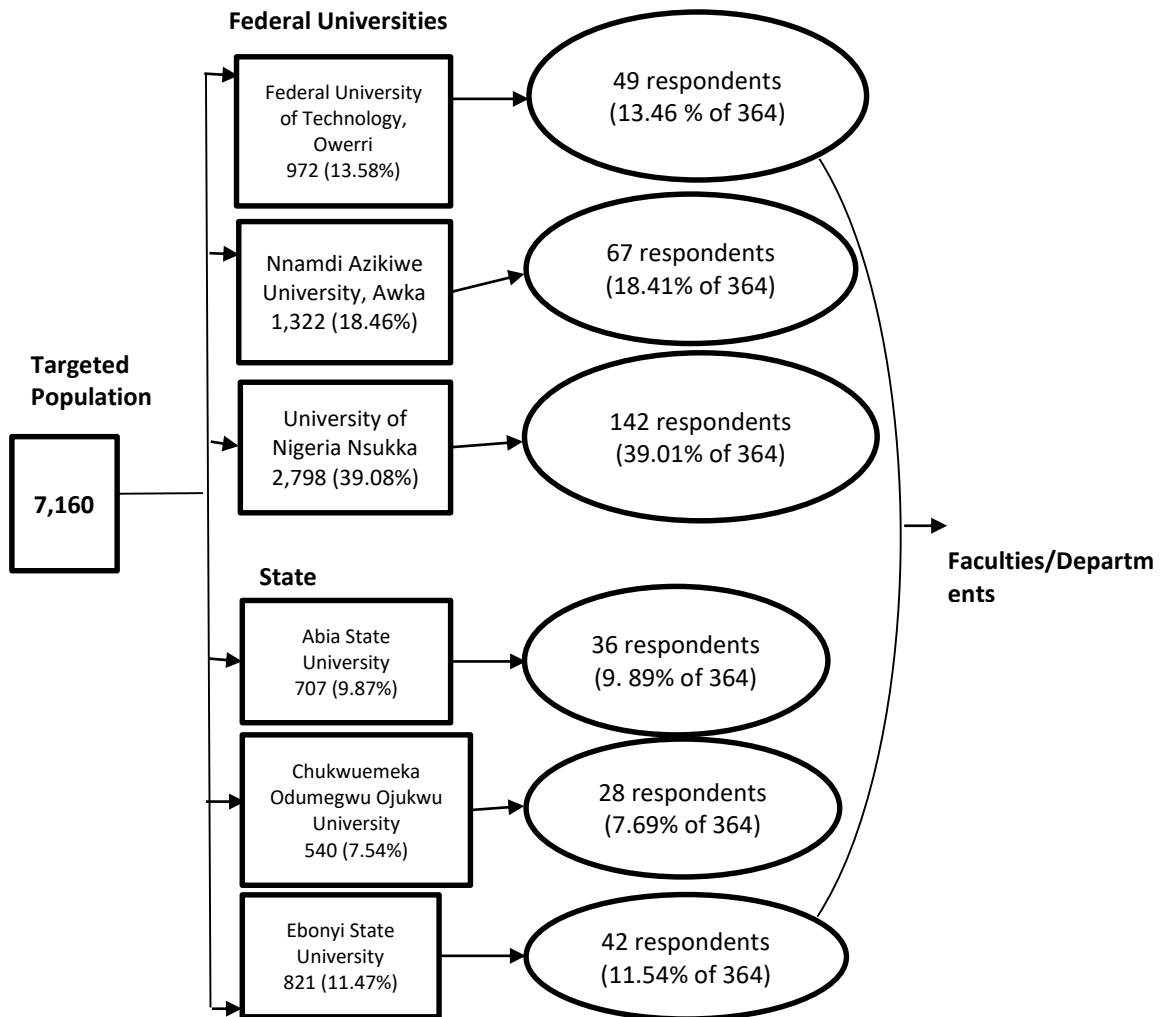


Figure 2: Actual sample size used for the study

*Measurement of the Variables and Operationalization of Variables*

While creating this study’s questionnaires, two types of questions were considered. These were closed-ended and open-ended questions. The closed-ended ones were in Likert scale. Whereas the opened-ended ones provided them with the opportunity of putting down their own opinions. However, a total of 29 items were used for this study but they were organized in 3 major sections. Section A was the respondents’ demographic profile and it has 5 items. While Section B was questioned on the immediacy factors and this consisted of 16 items. Section C was the questions for measuring communication satisfaction and it comprised 8 items. Furthermore, both the section B and C were Likert scale questions and were also structured in the following order: Strongly Disagree (1), Disagree (2), Somewhat Agree (3), Agree (4) and Strongly Agree (5). Some of these items were adopted while others were adopted from previous scholars who have done similar studies. Additionally, the items used and measured communication satisfaction, as the dependent variable of the study were 8 in number. 7 items comprised both adapted and adopted

items from (Downs & Hazen 1977; Pritchett, Naile, Murphrey & Reeves 2014; & Iriani, 2006). Whereas, 1 item was self-developed. Immediacy factors as the independent variables of the study consisted of prompt feedback, approachability and similar personality and they were measured with 16 items. 14 items were adapted from (Rodriguez, 2015; Gunawardena & Zittle, 1997; Asiri 2013; & Walkem, 2014). While the remaining 2 items were self-developed.

#### *Pilot /Actual Study Reliabilities and Construct Validities*

A pilot test was conducted to ensure that the items used and measured the variables of the study are reliable and clear. Therefore, the reliability test was run to ensure the internal consistency in the items. However, the pilot study was run with 36 respondents, which was 10% of 363 sample size. Thus, the outcomes of the pilot study and the actual study showed that the four constructs were all reliable as their Cronbach's alpha values were all  $\geq .70$  as can be seen in Table 1.

Table1: Constructs' Reliability Cronbach Alpha for Pilot and Actual study

S/N	Constructs	Numbers of Items	Cronbach Alpha for Pilot Study (n=36)	Cronbach Alpha for the Actual Study(n=363)
1	Prompt feedback	5	.791	.725
2	Approachability	5	.823	.757
3	Similar Personality	6	.847	.745
4	Communication Satisfaction	8	.839	.844

Construct/convergent validities for the 4 variables were further ascertained during the actual study's analysis in the AMOS in order to know whether they actually measured what they are meant to measure. Consequently, the values showed that the average variance extracted (AVE) for each construct was  $\geq .50$ . In other words, the 4 constructs were all valid as can be seen in Table 2.

Table 2: Construct Validity / Average Variance Extracted

S/N	Constructs	Average Variance Extracted(AVE)
1	Prompt feedback	.67
2	Approachability	.53
3	Similar personality	.55
4	Communication Satisfaction	.52

#### *Data Analysis*

We used 3 statistical tools for analyzing the data and these were descriptive statistics, exploratory factor analysis (EFA) and Structural Equation Modeling (SEM) analysis. Each of them would be subsequently discussed.

*a. Descriptive Statistics Analysis*

The first objective of the study on communication satisfaction levels was analyzed via the Statistical Package for Social Sciences (SPSS) version 23 software. This was done via summation of the respondents' scores on communication satisfaction's 4 items that passed the CFA stage. The summated scores were further recorded into a different variable in SPSS and classified into 3 classes. The finding was finally realized by subtracting 5, which was the lowest score from 20 as the highest score and divided the outcome by 3. Those who scored from (5-10) were assigned "1" as low, while those who scored from (11-15) were given "2" as moderate. Whereas those who scored 16 and above were assigned "3" as high.

*b. Exploratory Factor Analysis (EFA)*

The exploratory factor analysis (EFA) was equally run via SPSS in order to confirm the factor dimensions since some of the items used in measuring the variables of our study were adapted from previous scholars who have done similar studies. Therefore, the outcomes from the exploratory factor analysis via varimax rotation showed that none of the reported eigenvalues was less than 1. This complied with (Kaiser, 1960); and the total variance percentage was also not lesser than 60% according to (Hair, Black, Babin, Anderson & Tatham, 2006). Here, eigenvalues implied the amount of differences and percentage of the variance of the entire sample contributed by individual factors. Initially, 24 items were used and ran the EFA, 16 items eventually met up the criteria. Their Kaiser-Meyer-Olkin (KMO) sampling adequacy Barlett's test of sphericity was equally assessed. Thus, the result showed that .819 was (>.70) and Chi-square value for Barlett's test of sphericity was 2025.240 (df =120, p<0.05). Finally, the 4 factors which comprised prompt feedback, approachability, similar personality and communication satisfaction were able to explain 60.661% of the total variance. Table 3 presented the EFA outcomes.

Table 3: Exploratory Factor Analysis

<b>Factors/Variables</b>	<b>Variance%</b>	<b>Eigen Values%</b>	<b>Items factor loading</b>
<b>Immediacy Factors</b>			
<b>Prompt feedback</b>	31.50	5.04	
SEB1: Recognizing that it is an official responsibility to check email will facilitate feedback via email as a means of interaction.			.83
SEB2: Providing clear and timely info through email dialogue facilitate responses.			.85
SEB5: Accessing email through mobile technology will facilitate email responses			.54
<b>Approachability</b>	10.97	1.76	
SEB8: I feel freely asking co-workers to clarify any unclear issues encountered in email dialogue.			.74
SE9: I feel comfortable interacting with co-workers via email as text-based medium.			.82
SEB10: I do create feeling of text-based interaction towards email.			.69

	9.41	1.51	
<b>Similar personality</b>			
SEB12: I am convinced that official issues can be best disseminated through email mode of communication.			.72
SEB14: I am convinced that commitment in discharging official issues through will yield fast results			.72
SEB15: I am convinced that email is more suitable for disseminating official issues.			.88
SEB16: I am convinced that using email in disseminating official info can strengthen a connection with co-workers.			.76
<b>Communication Satisfaction</b>	8.78	1.41	
SEC2: I am satisfied with accomplishing anything via email			.61
SEC3: I feel I effectively communicate through email.			.67
SEC4: I feel dissemination of info via email helps in understanding others' point of views.			.63
SEC6: I feel communication via email motivates and stimulates zeal for meeting my institution's targeted goals			.74
SEC7: I feel communicating through email helps in identifying with my institution.			.77
SEC8: I feel written directives and reports through email are clear and concise.			.68

### *c. Structural Equation Modeling (SEM) Analysis*

Objective two and three on the direct effects of immediacy factors on email satisfactory communication and the factor that contributed most on email satisfactory communication were analyzed via Structural equation modelling (SEM-AMOS) version. SEM-AMOS is a multivariate covariance statistics that comprised confirmatory factor analysis, path analysis and multiple regression. It is further simultaneously used for evaluating dependency relationships between exogenous and endogenous variables (Hair, Hair, Black, Babin & Anderson, 2010). Prior to the analysis, the normality assumption and other requirements, which included resolving outliers' issues were observed. The outcomes showed that the skewness and kurtosis values ranged between -.248 and 2.023, in other words, all the items used in (SEM-AMOS) analysis were normally distributed. However, before SEM was applied, certain criteria were also fulfilled and these were:

### *Confirmatory Factor Analysis (CFA)*

It was run for reducing bigger inter-correlated items to represent lesser constructs (Ho, 2006). In this study, the CFA for immediacy factors, comprising prompt feedback, approachability and similar personality was run via first-order. While simple CFA was run for communication satisfaction. Initially, 16 items that scaled through the EFA stage were taken to CFA stage, eventually, 12 items passed the CFA stage. The outcomes also showed that each of the item's factor loading was  $\geq .50$ .

**Construct Validity**

Two kinds of construct validities were tested in this study and these were:

**a. Convergent Validity**

Average Variance Extracted (AVE) was used and ascertained the construct validity. The values showed that all the 4 constructs comprising prompt feedback, approachability, similar personality and communication satisfaction' AVE were all  $\geq .50$  respectively.

**b. Discriminant Validity**

This was equally satisfied in the study because the outcomes showed that each construct was free from multicollinearity issues. In other words, the AVE for each paired constructs was greater than the outcome of each construct's squared correlation matrix.

**Construct Reliability**

Construct reliability is synonymous with Cronbach alpha in SPSS, in our study, it was used and ascertained the internal consistency of the data analyzed via (SEM-AMOS). The cut-off value for construct reliability in (SEM-AMOS) is also  $\geq .70$ . Therefore, the four constructs used and run the (SEM-AMOS) analysis of our study were all reliable because their values were as follow: .79, .70, .83 and .80 respectively as seen in Table 4.

Table 4: Summary of Confirmatory Factor Loadings, Construct Reliability and Convergent Validity from (SEM-AMOS) Measurement Model

Latent Variable Section	Construct Names	Factor Loading $\geq .50$	Construct Reliability (CR) $\geq .70$	Average Variance Extracted (AVE) $\geq .50$
SEB1 SEB2	<b>Prompt feedback</b>	.91 .71	.79	.67
SEB9 SEB10	<b>Approachability</b>	.68 .77	.70	.53
SEB12 SEB14 SEB15 SE16	<b>Similar personality</b>	.65 .69 .85 .77	.83	.55
SEC3 SEC6 SEC7 SEC8	<b>Communication satisfaction</b>	.57 .72 .87 .69	.80	.52

### Test for Model Fit

Model fit in SEM is ascertained by the goodness of fit indices. So, in this study, it showed that it satisfied the criteria because the goodness of fit indices met up with at least one fit index from absolute fit, incremental fit and parsimonious fit Indices. In other words, it met up with at least CMIN/DF, which stands for the minimum discrepancy, Tucker-Lewis index (TLI) and Root Mean Square Error of Approximation (RMSEA) according to Hair et al. (2010) as can be seen in Figure 3 and 4.

### SEM Measurement Model

This is the 2nd stage of SEM-AMOS analysis; Figure 3 showed that the measurement model's goodness of fit indices was met. The outcomes also showed that the model met up with at least one fit index from an absolute fit, incremental fit and parsimonious fit Indices as can be seen in Figure 3. In other words, CMIN/DF, which stands for the minimum discrepancy was  $<5$ , while Tucker-Lewis index (TLI) was  $\geq .90$  and Root Mean Square Error of Approximation (RMSEA) was equally  $\leq .08$  according to (Hair et al., 2010).

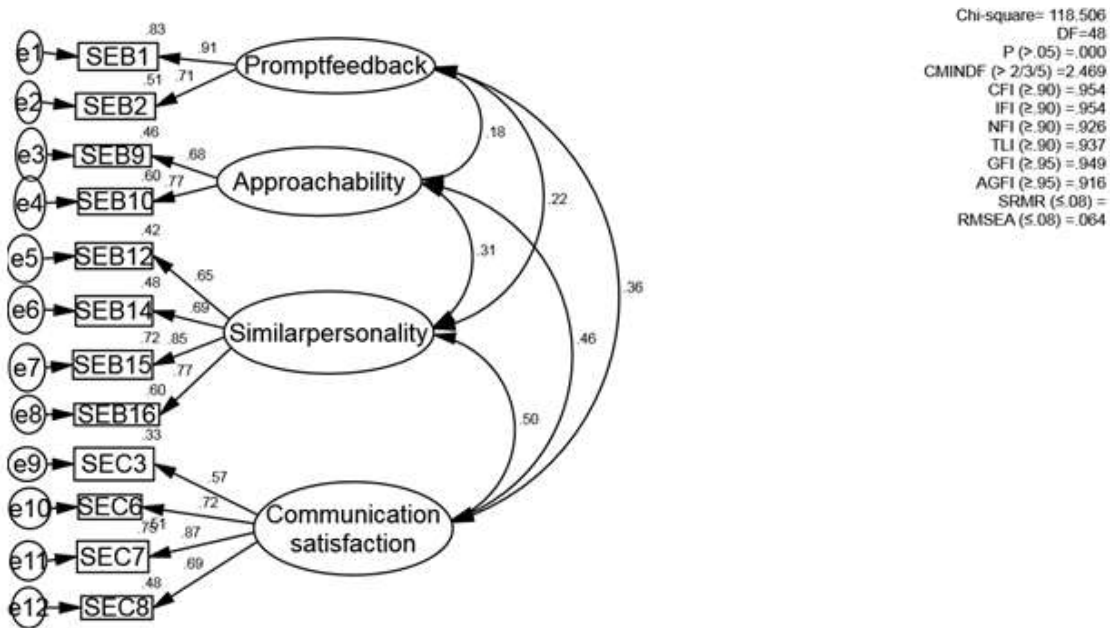


Figure 3: SEM Measurement Model

### Structural Model

The structural model is the last stage of (SEM-AMOS) analysis. It is also the stage where specific sets of causal effects relationships between the constructs are demonstrated. In other words, the multiple regression analysis was ascertained at this stage. It further depicted the theoretical sets of the structural equation. Thus, the outcomes of the structural model showed that the data collected fitted the model as a result of the ability in satisfying at least one fit index from absolute, incremental and parsimonious fit Indices respectively as can be seen in Figure 4. Similarly,

CMIN/DF, which stands for the minimum discrepancy was <5, while Tucker-Lewis index (TLI) was  $\geq .90$  whereas Root Mean Square Error of Approximation (RMSEA) was equally  $\leq .08$  according to (Hair et al., 2010). It further showed the outcomes of direct effects tested in our study as seen in Table 7.

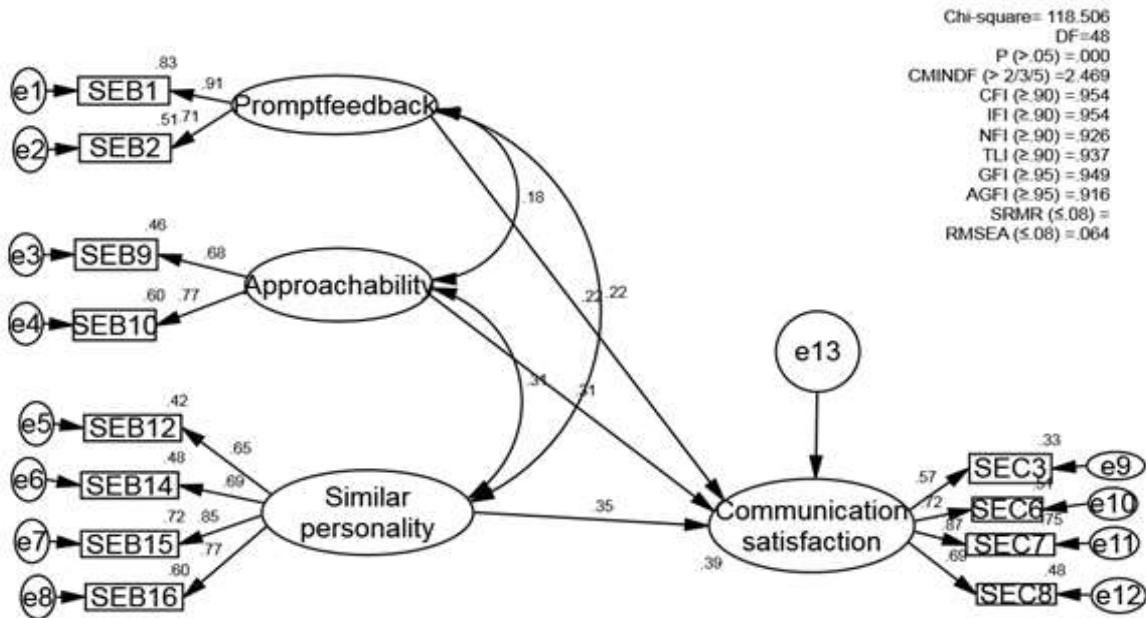


Figure 4: SEM Structural Model

### FINDINGS AND DISCUSSIONS

This section discusses the profile of the respondents and the findings of the research. In reference to the profile of the respondents, Table 5 shows that 83.3% majority of them are male academic staff. It equally presents that 33.6% of the respondents' age brackets are between 31 and 40 years of age. In terms of the job status, it depicts that 56.5% of them are under lecturer job position and this position comprised the graduate assistants, assistant lecturers, lecturer 1 and lecturer 2. Furthermore, it displays that 56.6% of them are doctorate degree holders, whereas, 37.5% of them are having 1-5 years working experience.

Table 5: Academic Staff Descriptive Profile (n=363)

Profile	Frequency	Percentage (%)
<b>Gender</b>		
Male	295	81.3
Female	68	18.7
<b>Age</b>		
20-30	40	11.0
31-40	122	33.6
41-50	119	32.8
51>	83	22.6

<b>Job position</b>		
Professors	34	9.4
Assoc. Professor	35	9.6
Senior Lecturer	89	24.5
Lecturer	205	56.5
<b>Highest Educational Qualification</b>		
Bachelor Degree	14	3.9
Masters' Degree	144	39.7
Doctorate Degree	205	56.5
<b>Years of Working Experience</b>		
1-5	136	37.47
6-10	80	22.04
11-15	64	17.63
16-20	44	12.12
21>	39	10.74

*Objective 1: Email Satisfactory Communication Levels of the Respondents*

For the first objective on the email satisfactory communication levels of the respondents, the outcomes in Table 6 shows that email satisfactory communication level of more than half of the respondents was not a high one. In other words, only 46.6% of them are presented to have high email satisfactory communication. This finding slightly refuted Gallego-Arrufat and Gutiérrez-Santiuste (2015) outcomes from the virtual classroom scenario which demonstrated that a very high level of satisfactory communication is achieved from virtual communication media.

Table 6: Respondents' Email Satisfactory Communication Levels Descriptive Outcomes (n=363)

<b>Level of communication satisfactions</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Low (5-10)	28	7.7
Moderate (11-15)	166	45.7
High (16 and above)	169	46.6

*Objective 2: The Outcomes of Direct Effects of Immediacy Factors on Email Satisfactory Communication*

The outcomes of direct effects of immediacy factors on email satisfactory communication were shown in Table 7. The first hypothesis stated that:

**H1a:** There is a direct significant effect of prompt feedback on email satisfactory communication. From the structural model analysis in Table 7, it shows that there is a direct significant effect of prompt feedback on communication via email ( $\beta=.224$ ,  $p<.05$ ). Therefore, hypothesis H1a is supported. It implied that, for every 1 standard deviation increase on prompt feedback, will lead to 22.4% standard deviation increase on email satisfactory communication. Thus, our findings supported Wang, Pauleen and Zhang (2016) findings that prompt feedback on virtual interaction media has direct significant effect towards achieving satisfactory communication. The second hypothesis stated that:



**H1b:** There is a direct significant effect of approachability on email satisfactory communication. Based on the analysis outcomes in Table 7, there is direct significant effect of approachability on email satisfactory communication ( $\beta=.306$ ,  $p<.05$ ). Hence, hypothesis H1b is supported. This denoted that for every 1 standard deviation increase on approachability, would bring about 30.6% standard deviation increase on email satisfactory communication. Therefore, our findings supported Sarapin and Morris (2015) who previously demonstrated a direct significant effect of approachability on the Facebook satisfactory communication medium. The last hypothesis stated that:

**H1c:** There is a direct significant effect of similar personality on email satisfactory communication.

Inferring from the analysis outcomes in Table 7, there is a direct significant effect of similar personality on email satisfactory communication ( $\beta=.352$ ,  $p<.05$ ). Hence, hypothesis H1c is supported. It illustrated that for every 1 standard deviation increase on similar personality, would bring about 35.2% standard deviation increase on email satisfactory communication. Thus, our finding contradicted Chung and Tabak (2015) findings from text-based and face-to-face interactions studies that similar personality has no direct significant effect on satisfactory communication.

Table 7: Direct Effects of immediacy Factors on Email Satisfactory Communication

	<b>b</b>	<b>S.E</b>	<b><math>\beta</math></b>	<b>CR</b>	<b>P-Level</b>
<b>Prompt feedback</b>	.136	.040	.224	3.408	.000
<b>Approachability</b>	.233	.055	.306	4.249	.000
<b>Similar personality</b>	.268	.052	.352	5.120	.000

$R^2=.394$

*Objective 3: The Immediacy Factor that Contributed Most on Email Satisfactory Communication*

From the structural model analysis outcomes in Table 7, it showed that similar personality dimension of immediacy contributed most on email satisfactory communication ( $\beta=.352$ ,  $p<.05$ ). This was because it singly contributed 35.2% of the variance on email satisfactory communication, which was greater than the ones individually contributed by prompt feedback and approachability. However, all the three immediacy factors were able to explain 39.4% of the variance on email satisfactory communication and this indicated a large effect-size one. Therefore, we commend that south-East Nigerian academic staff should observe these three immediacy factors, especially similar personality if they aim to achieve email satisfactory communication.

**CONCLUSION, STUDY IMPLICATIONS AND LIMITATIONS**

In this study, we examined the email satisfactory communication levels of the respondents. We also evaluated the direct effects of immediacy factors on email satisfactory communication and the immediacy factor that contributed most on email satisfactory communication. Our findings on the email satisfactory communication levels showed that more than half of the respondents did not have a high level of email satisfactory communication. Therefore, we commend that their email satisfactory communication levels need to be enhanced. We equally found that the three

immediacy factors comprising, prompt feedback, approachability and similar personality had significant direct effects on email satisfactory communication. Thus, we recommend that Nigerian academic staff should observe these three immediacy factors if they target to achieve email satisfactory communication. We further identified a similar personality immediacy dimension as the factor that contributed most to email satisfactory communication. Thus, we urge them to consider it most towards the yearning for email satisfactory communication.

Additionally, our findings have some implications. One of the implications is that it will subsequently serve as a point of references for policy implementations on email and other asynchronous communication technologies' satisfactory communication and their enhancements, especially among academic staff and organizations in the emerging societies. Moreover, it has a theoretical implication, since our study was guided by social presence theory and its variables were able to explain a large effect-size of 39.4% variance on email satisfactory communication, it has helped and expanded the theory. Therefore, we encourage email users and other asynchronous virtual communication media users to embrace these social presence theory factors if they crave for satisfactory communications.

Furthermore, our study has some limitations and recommendations for future studies, one of them was that we observed that the greater percentage of our study's sample size consisted of young academic staff whose age was between 31-40 years, thus, the findings of our study might not have represented the entire workforce. Consequently, we proposed that future scholars who intend to conduct a similar study should consider adjusting this by ensuring that the entire workforce is fully represented. Another limitation was that a greater percentage of the academic staff were having less than 6 years of working experience and this might have influenced our study's findings. Hence, prospective scholars need to adjust this in the future while conducting similar studies. Finally, since the factors evaluated in our study were limited to three predictors, there are possibilities that other factors might also influence email satisfactory communication. Therefore, we suggest that future studies should concentrate on other factors that might influence email or other asynchronous virtual media satisfactory communications.

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#### REFERENCES

- Alkahtani, H., Dawson, R., & Lock, R. (2015, March). *Communication and effective email usage in Saudi Arabia*. Presented paper at BCS Software Quality Management Conference. Retrieved from <https://dspace.lboro.ac.uk/dspace-jspui/handle/2134/18274>
- Andre Hasudungan Lubis, Syed Zulkarnain Syed Idrus, & Asiah Sarji. (2018). ICT usage amongst lecturers and its impact towards learning process quality. *Jurnal Komunikasi: Malaysian Journal of Communication*, 34(1).
- Asiri, A. A. (2013). *The impact of instructor immediacy on college student communication and learning outcomes in Saudi Arabia* (Doctoral dissertation, Victoria University).
- Baker, L. R., & Oswald, D. L. (2010). Shyness and online social networking services. *Journal of Social and Personal Relationships*, 27(7), 873–889.
- Bankole, O. M. (2013). The use of internet services and resources by scientists at Olabisi Onabanjo University, Ago Iwoye, Nigeria. *Program*, 47(1), 15–33.
- Bhagat, K. K., Wu, L. Y., & Chun-Yen, C. (2016). Development and validation of the perception of students towards online learning (POSTOL). *Journal of Educational Technology & Society*, 19(1), 350-359.
- Brooks, C. F., & Young, S. L. (2016). Exploring communication and course format: Conversation frequency and duration, student motives, and perceived teacher approachability for out-of-class contact. *The International Review of Research in Open and Distributed Learning*, 17(5), 236-247.
- Carneiro, J., Martinho, D., Marreiros, G., & Novais, P. (2015, September). *Defining agents' behaviour for negotiation contexts*. Paper presented at Portuguese Conference on Artificial Intelligence (pp. 3-14). Cham: Springer.
- Chang, C.-M., & Hsu, M.-H. (2016). Understanding the determinants of users' subjective well-being in social networking sites: An integration of social capital theory and social presence theory. *Behaviour & Information Technology*, 35(9), 720–729.
- Chuang, M. Y., & Tabak, F. (2015). Personality and persuasion in computer-mediated communication. *International Journal of Business and Systems Research*, 9(3), 255–272.
- Cecchinato, M. E., Cox, A. L., & Bird, J. (2015, April). Working 9-5?: Professional differences in email and boundary management practices. *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems* (pp. 3989-3998).
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Thousand Oaks: Sage publications.
- Cui, G., Lockee, B., & Meng, C. (2013). Building modern online social presence: A review of social presence theory and its instructional design implications for future trends. *Education and Information Technologies*, 18(4), 661–685.
- Deuze, M. (2017). Media life and media work. In, *Televisão e novos meios*. Covilhã: Labcom.IFP. Retrieved from <https://dare.uva.nl/search?identifier=3514a15a-ba79-466d-a972-c0d91a2beff9>
- Dixon, M. D., Greenwell, M. R., Rogers-Stacy, C., Weister, T., & Lauer, S. (2017). Nonverbal immediacy behaviors and online student engagement: Bringing past instructional research into the present virtual classroom. *Communication Education*, 66(1), 37-53.

- Downs, C. W., & Hazen, M. D. (1977). A factor analytic study of communication satisfaction. *The Journal of Business Communication* (1973), 14(3), 63–73.
- Edwards, J. E. (1997). *How to conduct organizational surveys: A step-by-step guide*. London: Sage.
- Email Statistics. (2019–2020). Retrieved from [http://www.email statistics report-Radicati Group](http://www.emailstatisticsreport.com).
- Gallego-Arrufat, M.-J., & Gutiérrez-Santiuste, E. (2015). Perception of democracy in computer-mediated communication: Participation, responsibility, collaboration, and reflection. *Teaching in Higher Education*, 20(1), 92–106.
- Garrison, D. R. (2011). *E-learning in the 21st century: A framework for research and practice*. United Kingdom: Taylor & Francis.
- Giesbers, B., Rienties, B., Tempelaar, D., & Gijssels, W. (2014). A dynamic analysis of the interplay between asynchronous and synchronous communication in online learning: The impact of motivation. *Journal of Computer Assisted Learning*, 30(1), 30-50.
- Gutiérrez-Santiuste, E., & Gallego-Arrufat, M. J. (2015). Internal structure of virtual communications in communities of inquiry in higher education: Phases, evolution and participants' satisfaction. *British Journal of Educational Technology*, 46(6), 1295-1311. <https://doi.org/10.1111/bjet.12218>
- Gunawardena, C. N. (1995). Social presence theory and implications for interaction and collaborative learning in computer conferences. *International Journal of Educational Telecommunications*, 1(2/3), 147–166.
- Gunawardena, C. N., & Zittle, F. J. (1997). Social presence as a predictor of satisfaction within a computer-mediated conferencing environment. *American Journal of Distance Education*, 11(3), 8–26.
- Guo, W., Chen, Y., Lei, J., & Wen, Y. (2014). The effects of facilitating feedback on online learners' cognitive engagement: Evidence from the asynchronous online discussion. *Education Sciences*, 4(2), 193-208.
- Haddouch, R. (2017). *The use of email and the relationships between education leaders and followers* (Doctoral dissertation, University of Montana).
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2006). *Multivariate data analysis* (6th ed., pp. 5-16). Upper Saddle River, New Jersey, USA: Prentice–Hall, International Inc.
- Hair, J. F., Black, B., Babin, B., Anderson, R. E., & Tatham, R. L. (2010). *Multivariate data and data analysis*. Englewood Cliff: Pearson.
- Hamed M. Adnan, & Samira Rahimi Mavi. (2015). Facebook satisfaction, life satisfaction: Malaysian undergraduate experience. *Jurnal Komunikasi: Malaysian Journal of Communication*, 31(2), 649-671.
- Hazita Azman, Ali Salman, Norizan Abdul Razak, Supyan Hussin, Mohd Safar Hasim, & Musa Abu Hassan. (2014). Determining digital maturity among ICT users in Malaysia. *Jurnal Komunikasi: Malaysian Journal of Communication*, 30(1).
- Hecht, M. L. (1978). Measures of communication satisfaction. *Human Communication Research*, 4(4), 350–368.
- Herring, S. C., & Androutsopoulos, J. (2015). Computer-mediated discourse 2.0. *The handbook of Discourse Analysis*, 2, 127-151.
- Ho, R. (2006). *Handbook of univariate and multivariate data analysis and interpretation with SPSS*. Florida: CRC press.

- Holz, R., Amann, J., Mehani, O., Wachs, M., & Kaafar, M. A. (2015). TLS in the wild: An Internet-wide analysis of TLS-based protocols for electronic communication. *Cryptography and Security (cs.CR)*. Retrieved from <https://arxiv.org/abs/1511.00341>
- Iriani, T. (2006). *Factors influencing communication satisfaction among e-mail users in selected private organisations in Indonesia* (Doctoral dissertation, Universiti Putra Malaysia).
- Jacobs, M. A., Yu, W., & Chavez, R. (2016). The effect of internal communication and employee satisfaction on supply chain integration. *International Journal of Production Economics*, 171, 60–70.
- Kaiser, H. F. (1960). The application of electronic computers to factor analysis. *Educational and Psychological Measurement*, 20(1), 141–151.
- Kim, J., Kwon, Y., & Cho, D. (2011). Investigating factors that influence social presence and learning outcomes in distance higher education. *Computers & Education*, 57(2), 1512–20.
- Kim, J., & Song, H. (2016). Celebrity's self-disclosure on Twitter and parasocial relationships: A mediating role of social presence. *Computers in Human Behavior*, 62, 570–577.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30(3), 607–610.
- Lee, H. S., & Lee, H. J. (2014). Factors influencing online trust. *Academy of Marketing Studies Journal*, 18(1), 41-271.
- Lengacher, L. (2015). Mobile technology: Its effect on face-to-face communication and interpersonal interaction. *Undergraduate Research Journal for the Human Sciences*, 14(1).
- Mahomed, B., & Shah, A. (2015). *Examining email usage among non-academic staff in public and private Malaysian Universities* (Doctoral dissertation, Victoria University).
- Maleske, R. T. (1995). *Foundations for gathering and interpreting behavioral data: An introduction to statistics*. CA, United States: Thomson Brooks/Cole.
- Manca, S., & Ranieri, M. (2016). "Yes for sharing, no for teaching!" Social media in academic practices. *The Internet and Higher Education*, 29, 63-74.
- McGuire, B. F. (2016). Integrating the intangibles into asynchronous online instruction: Strategies for improving interaction and social presence. *Journal of Effective Teaching*, 16(3), 62-75.
- Mehrabian, A. (1971). *Silent messages*. Belmont, California: Wadsworth Publishing Company.
- Mohd Azul Mohamad Salleh, Ali Salman, Mohd Nor Shahizan Ali, & Hasrul Hashim. (2016). The importance of usability features in enhancing online communication satisfaction. *Jurnal Komunikasi: Malaysian Journal of Communication*, 32(1).
- Mukoroi, A. S. (2013). Improving industrial harmony and staff performance in a school organization through effective communication. *International Journal of Scientific Research in Education*, 6(3), 263–270.
- Ogara, S. O., Koh, C. E., & Prybutok, V. R. (2014). Investigating factors affecting social presence and user satisfaction with mobile instant messaging. *Computers in Human Behavior*, 36, 453-459.
- Olatokun, W. M. (2017). Availability, accessibility and use of ICTs by Nigerian women academics. *Malaysian Journal of Library & Information Science*, 12(2), 13-33.
- Pang, A., Shin, W., Lew, Z., & Walther, J. B. (2018). Building relationships through Dialogic communication: Organizations, stakeholders, and computer-mediated communication. *Journal of Marketing Communications*, 24(1), 68-82.

- Pritchett, K. M., Naile, T. L., Murphrey, T. P., & Reeves, L. F. (2014). Participant satisfaction related to social presence in agricultural conversations using Twitter: Implications for agricultural communications. *Journal of Applied Communications*, 98(3), 32-48.
- Punch, K. F. (2013). *Introduction to social research: Quantitative and qualitative approaches*. Thousand Oaks: Sage.
- Rodriguez, M. (2015). *The relationship between social presence, student satisfaction and academic achievement in fully online asynchronous courses* (Thesis, The University of Texas Rio Grande Valley, United States). Retrieved from <http://hdl.handle.net/2152.6/621>
- Sallnäs, E.-L. (2005). Effects of communication mode on social presence, virtual presence, and performance in collaborative virtual environments. *Presence: Teleoperators and Virtual Environments*, 14(4), 434–449.
- Sarapin, S. H., & Morris, P. L. (2015). Faculty and Facebook friending: Instructor–student online social communication from the professor's perspective. *The Internet and Higher Education*, 27, 14-23.
- Savidou, C. (2013). “Thanks for sharing your story”: The role of the teacher in facilitating social presence in online discussion. *Technology, Pedagogy and Education*, 22(2), 193–211.
- Short, J., Williams, E., & Christie, B. (1976). *The social psychology of telecommunications*. London: John Wiley & Sons.
- Smits, A., & Voogt, J. (2017). Elements of satisfactory online asynchronous teacher behaviour in higher education. *Australasian Journal of Educational Technology*, 33(2), 97-114. <https://doi.org/10.14742/ajet.2929>
- Stone, D. L., Deadrick, D. L., Lukaszewski, K. M., & Johnson, R. (2015). The influence of technology on the future of human resource management. *Human Resource Management Review*, 25(2), 216-231.
- Swan, K., & Shih, L. F. (2005). On the nature and development of social presence in online course discussions. *Journal of Asynchronous Learning Networks*, 9(3), 115–136.
- Thibaut, J. W. (2017). *The social psychology of groups*. NY: Routledge.
- Tiwari, S. K. (2016). A study on impact of ICT on library and information services. *International Journal of Recent Advances in Engineering & Technology*, 4(1), 26–31.
- Tu, C.-H. (2001). How Chinese perceive social presence: An examination of interaction in online learning environment. *Educational Media International*, 38(1), 45–60.
- Walkem, K. (2014). Instructional immediacy in elearning. *Collegian*, 21(3), 179-184. <https://doi.org/10.1016/j.colegn.2013.02.004>
- Walter, N., Ortbach, K., & Niehaves, B. (2015). Designing electronic feedback – Analyzing the effects of social presence on perceived feedback usefulness. *International Journal of Human-Computer Studies*, 76, 1–11.
- Weinel, M., Bannert, M., Zumbach, J., Hoppe, H. U., & Malzahn, N. (2011). A closer look on social presence as a causing factor in computer-mediated collaboration. *Computers in Human Behavior*, 27(1), 513-521.
- Wang, W. Y. C., Pauleen, D. J., & Zhang, T. (2016). How social media applications affect B2B communication and improve business performance in SMEs. *Industrial Marketing Management*, 54, 4–14.

- Wu, W., Chen, L., & Yang, Q. (2016). Students' Personality and Chat Room Behavior in Synchronous Online Learning. *UMAP (Extended Proceedings)*. Retrieved from <https://dblp.org/rec/conf/um/WuCY16.html>
- Xiao, L., & Huang, D. (2016). Between-team communication in the intercultural context. *Information, Communication & Society*, 19(7), 940-955.