



## Applying Communication Theory to Structure and Evaluate the Social Media Platforms in Academia

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### ABSTRACT

The aim of this research was to reduce the dissimilarities in the literature regarding the use of social media platforms (SMPs) for training and its impact on students' satisfaction and academic performance in higher education institutions. The main method of data collection for Communication Theory (CT) was a questionnaire survey. This research hypothesizes that CT applied to social media platforms for learning will affect online communication, motives to communicate, communication self-efficacy and attitude towards use that in turn improve students' satisfaction and students' academic performance. The data collection questionnaire was conducted with 309 students familiar with social media platforms. Quantitative structural equation modeling was employed to analyze the results. A significant relationship was found between online communication, motives to communicate, communication self-efficacy and attitude towards use features with TC for utilizing social media platforms for academic purposes that positively affected satisfaction and academic performance. Therefore, the study indicates that TC theory to use social media improve the collaborative learning of students and enable them to efficiently share knowledge, information, and discussions. We recommend that students utilize social media platforms in pursuit of their educational goals. Educators should also be persuaded to incorporate social media platforms into their classes at higher education institutions.

**Key words:** Communication Theory, Social Media, Structural Equation Modelling

### 1. INTRODUCTION

In spite of the upsurge of social media usage for educational purposes, inadequate research works have been carried out in

exploring social media usage in Malaysian universities [1]. Equally, D Ryu and J Jeong [2] claimed that students find no association with the activities performed in online learning and communication. In general, studies have stressed on the exploitation of social media usage and the well-understanding of it for learners to enable the creation of learner-focused systems in education [3]. According to IL Stats [4], 68.6% of the Malaysian population have reliable access to Internet services, and 64% of this population are utilizing social media networks. The Malaysian population number who are on social media is increasing to the number of 13 million and growing 350,000 new users approximately in 2012 first six months [5]. Thus, this could demonstrate the crucial role of the social media in the daily routine of Malaysian people, however, it still needs to be further and more in-depth investigated to comprehend the importance of using social media by people [6]. For the practical contribution section, this study permits stakeholders in faculties, departments, and research management departments in universities, as well as the ministry of higher education, to have a comprehensive awareness of social media usage for communication and learning to affect students' academic performance and satisfaction by technology acceptance and interactivity. Consequently, learners will be encouraged to make use of social media for educational purposes. Furthermore, the study aims to develop an instrument and factors for academic organizations to measure and analyze the students' academic performance and satisfaction in terms of technology use.

#### 1.1 Educational use of social media

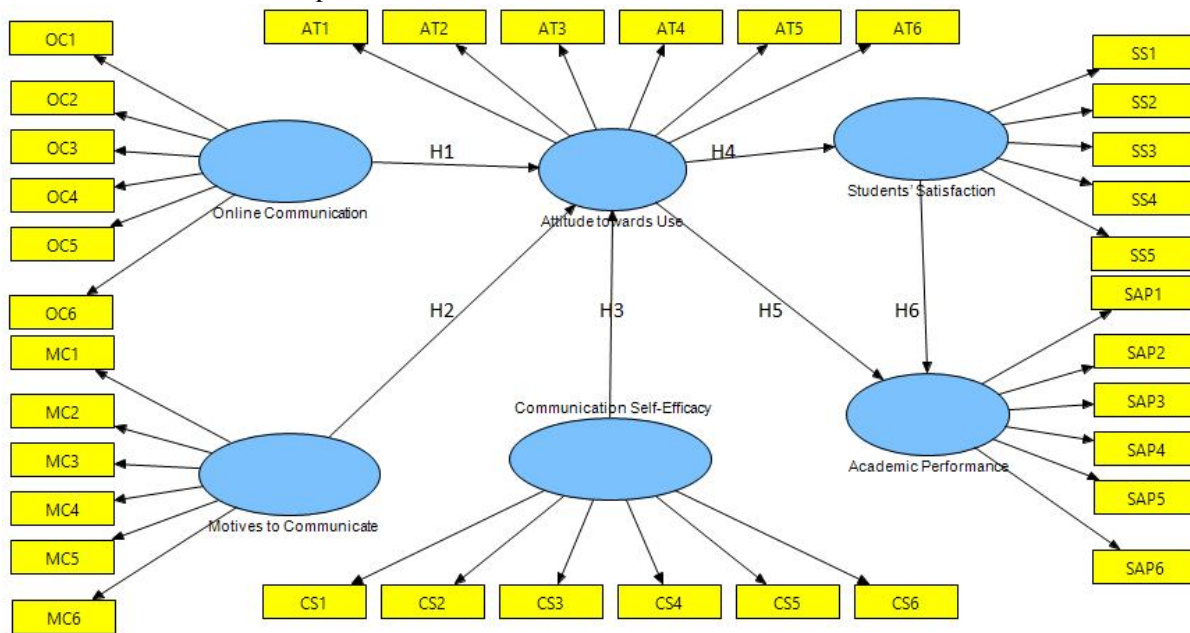
As the features of social media platform were constructed solely for the purpose of enriching the way people communicate and interact socially, their application in education serves several advantages to pedagogy which can be beneficial toward education environment benefiting both

for students and the instructors [7]. Due to the values it brings to pedagogy, instructors in higher education are beginning to devote their resources including effort and time utilizing the tools to enrich and mediate student learning [8]. about higher education perspective, several scholars suggest the deployment of social media which simplifies social education inside classes [9-11], enhances active learning by inspiring both learners and instructors to interact among each other [12], then promotes the learning activities that are students-centered [13]. Through literature, major social media use that is frequently examined is continuous connectivity and its value it provides to the higher education institutions that improves student communication and learning [14], which presents the learning type that is based on learners demands [15]. Furthermore, learners can retrieve swift updates regarding the information of the course as well as the course content whereas can be attained easily using the continuous connectivity of social media [16]. Definitions of social media have changed continually with a potentially improved characteristic to meet user specifications and demands. On the other hand, social networks are primarily created to satisfy the various niche markets to assist particular consumer's requirements and interest. Social media sites have the capabilities and function

of social media in order to make it simpler for its consumers to add friends, send mails, take part in groups, create personal profiles, content development, applications development , find out about different users [17]. The present internet, occasionally referred to as Web 2.0, permits for further Communication, modification and interaction, through the consumers [18] other than the previous type, that's used to be called web 1.0, which was less interactive and more inactive in its nature. They comprise of diverse and numerous items as mentioned by [19], for instance communication for learning through YouTube Blogs and Facebook.

**2. MODEL AND HYPOTHESES**

The theoretical model proposed in the present study is exploring all factors related to the TC theory such as (affect online communication, motives to communicate, communication self-efficacy and attitude towards use). These mentioned factors are found to be consequently influence the satisfaction and academic performance of students at institutes of higher education and are being discussed in this section accordingly See Figure.1.



**Figure 1:** Research Model

**2.1 Online Communication for Learning**

Social media isn't merely utilized for informal social networking or else improving social capital [20] then also aimed at improving consumer relations [21], marketing and online engagement [22] and complaint resolution and problem handling [23] across a variety of various sectors from different people. Educational sector had similarly acceded to the social media trend and adopted it on a global basis. In Higher-education, social media could also be employed for sharing, generating content, collaboratively socializing and networking [24]. Social media could have been used towards educational information, provide

education material, facilitate and updates, collaboration with communication. Facebook's social interaction features beneficial for students as well as educators by setting up an online tutorial group as well as improving communications among learner-learner along with instructor-learner [25] in addition to encouraging collaborative education through use Massive open online courses (MOOCs)[21]. Consciousness of the social media impact on courses is critical for instructors [26].The research does not mention the context complexities of specific education sectors then the importance of communications that may take a role in everyone , instead it offers short summary regarding few

communication values among ‘typical’ teaching schemes then mentions few of the possible pressures included [27]. One possible approach to solve restricted connections inside classroom is by technology [28]. Thus, AM Ledbetter and AN Finn [29] claim, it is possible that university learners also want to anticipate its teachers towards accept, as well as perhaps at the same time encouraging their students to utilize the technology inside classroom. Still, research however offers a partial knowledge on how technology influences involvement with repeated examples whereas a person could employ technology (e.g., [30] and case studies (e.g., [31], although not the connections among participation and technology use. Even Though earlier studies of technology in classrooms were revealing, they frequently stop short of theories on whereas contribution is improved. Subsequently, in this research they provide a broader model of how ICTs could improve participation in classroom. Accordingly, they look to dual consistent assessments of classroom participation: learner motives to interact with his/her attitudes throughout online communication. Thus, learner motives to connect Theorizing the classroom interactions as group of unique interactions, scholars claim it necessary to identify the reasons causing learners participating into interactions among their own teachers [32]. Motives could be described as learners’ own motivations for communicating with teachers [33]. Thus, five main motives about learners to interact were recognized: sycophantic, excuse making, functional, relational, and, most important to the current research, participating justifications. Thus, Participating interactions motives, learning motives through communications methods [34], push learners to make a contribution to classroom discussion by comments and other interaction forms. In view of the above discussion, the researchers propose the following hypothesis:

H1: The relationship between OC and AT.

## 2.2 Motivate to Communication in Learning

Theorizing the communication class like a singular position of human relations, scholars claim it is important to recognize the motivations after learners to develop relations among teachers [35]. Motivations could described as learners have their justifications for communicating to teachers [36]. Attaining the attention of learners and compelling them is a major challenge in an online setting. R Chugh and U Ruhi [37] have mentioned strategies to improve an online learning setting and motivate learners by Emphasizing critical points through the content, supporting the content with multimedia, offering crystal-clear guiding queries, employing both asynchronous and synchronous tools, and frequently interacting with learners . Expanding discussions over and above face-to-face interaction as well as on to Facebook calls for intrinsic and extrinsic measures to motivate learners by configuring tasks that encourage students to use their higher-order intellectual skills [38]. Extrinsic incentives like participation marks for how to use the Facebook for out-of-class discussion has a positive influence on academic achievement [39]. Teachers will have to be very more active in the early stages of Facebook activity formation to help guide the direction of online

discussion by learners and answering their questions [40]. In order to enhance interaction with learners on Facebook and in real-life situations and to ease learning, the role of educators should concentrate on being an investigator, counsellor, participant, prompter, and organizer rather than a controller, assessor and corrector [41]. R Chugh and U Ruhi [37] proposed that utilization of online tutor to self-disclosure that use Facebook in an online administered language lesson encourages a shift in learners’ motivation type – from extrinsic to intrinsic motivation. Intrinsic motivation has a tendency to yield the greatest positive outcomes in the educational process [42]. A Forkosh-Baruch and A Hershkovitz [43] also emphasized that the teacher self-disclosure using Facebook has resulted in the students showing excitement and improved interactions in contrast to a control group. In view of the above discussion, the researchers propose the following hypothesis:

H2: The relationship between MC and AT.

## 2.3 Communication Self-Efficacy

Self-efficacy is a person's assessment of that person's own ability regarding some expected behavior [44]. Individual with elevated self-effectiveness may be more expected to execute a certain behavior since that person considers within their abilities to do that [45]. Share knowledge self-effectiveness more accurately describes the belief an individual must being able to efficiently exchange information. To obtain this belief, an individual should be persuaded to possess real-world knowledge in value distribution then the necessary skills to deliver this information. Research regarding both off-line and online information sharing indicated that Share knowledge self-effectiveness is a significant forecaster of knowledge sharing behavior, particularly within an online perspective [46, 47]. There's also circumstantial sign of which a deficiency of Share knowledge self-effectiveness can hinder the sharing of knowledge. For instance, [48] mention qualitative research that involves online communities and the conclusion that lack of time and inexperience with the topic, two are of the major reasons why people refrain from sharing knowledge. [49] mention similar outcomes from quantitative research on online knowledge sharing. In The Same Way, in an effort to find out why Wikipedia users don't have the intention to contribute towards online encyclopaedia, [50] determined that the primary reason for non-contribution is that one considers to lack the necessary information to make a contribution. Building on these findings they could therefore come to the conclusion that whenever people believe they are not acquainted with a topic, or have not enough significant knowledge to share, they may choose not to share this knowledge. In view of the above discussion, the researchers propose the following hypothesis:

H3: The relationship between CS and AT.

## 2.4 Attitude towards use

According to the definition, attitudes are favourable or unfavourable, raising the question of the coherence. YK Dwivedi, NP Rana, A Jeyaraj, M Clement and MD Williams [51] suggested responses may be deemed to be in line when the person's assessments fall at either the positive or the

negative end of the dimension. R Lowe and P Norman [52] claimed that if one has positive emotions and thoughts towards some object, an individual's behavioral attitude towards it would also tend to reflect the fact that approval; in other terms, overt actions are usually products of implicit assessments. On that ground, one would assume instructors' positive perceptions and feelings about learners' media usage in the class to be reflected in favourable actions. Although motivation is a potent indicator of the reason that learners interact in the classroom, it doesn't show how learners feel about that interaction. JB Becton, HJ Walker, P Schwager and JB Gilstrap [53] identified motivation as being the effort to maintain and initiate an engagement in education. The attitudes significance is particularly relevant to online communication; in such a way, Arthur hypothesize here about motivations besides attitudes. As [54] says, online attitudes are likely to have variance experiences and consequences, thus affecting interpersonal interaction patterns in an exceptional manner. On the other hand, [55] description of attitudes as a comparatively persistent association of attitudes across a situation or an object influencing an individual to react in some special manner in order to create a degree for considerate communicating online attitudes. In Particular, [54] theorized online interaction attitudes as the cluster of affective and cognitive guidance can inhibit or enhance a person's propensity to communicate online. Despite The Fact That other people have proposed attitudes models which using online technology e.g., [56, 57], these patterns fail to explain the motivations communicative elements. As more classes continue to add aspects of social media [58, 59] and collegiate teaching becomes more polymerize [30], it's essential to consider these attitudes that could form the ways in which students cooperate in the classroom. In view of the above discussion, the researchers propose the following hypotheses:

H4: The relationship between AT and SS.

H5: The relationship between AT and AP.

### 2.5 Students' Satisfaction

Certain scholars established the potential and chance of social media to stimulate education by enabling information sharing and communication, encouraging student, engagement collaboration, and supporting [60-63]. As stated by R Kern, P Ware and M Warschauer [64], Facebook can generate a more comfortable classroom atmosphere, connect students and instructors, develop learners' and motivational level, and encourage cooperative models of education. Earlier results have proved that collaborative education positively influences satisfaction of student's [65, 66]. NM Labib, AE Sabry, RH Mostafa and EW Morcos [67] examine the factors of social media employing in collaborative education amongst postgraduate and undergraduate learners through examining the intrinsic and extrinsic motivation role, intentions and attitude. Significance of the research is examining using social media impacts in collaborative education on students, both postgraduate or undergraduate, from various facets like decision making, collaboration, socialization, interaction, performance, and student satisfaction. Depending on the

outcome, collaborative education substantially impacts behavioural intention in the of use social media then influences learning and teaching of students [68, 69]. In view of the above discussion, the researchers propose the following hypothesis:

H6: The relationship between SS and AP.

### 2.6 Students' Academic Performance

According to N Saha and AC Karpinski [70] social media through fields of research affects Students' academic performance and satisfaction of their users; In reality, social group formed on the Facebook was found to make it easier for learner development. Nevertheless, there are several exceptional instances where results show positive correlation between Twitter and Facebook [23, 69] and that incorporation could enhance education [71]. Investigation by D Laha and R Pal [72], the researcher noted that learners consume additional time utilizing social media for a different purpose besides learning usage, therefore influencing their learners academic performance. Study has been further elaborated by AC Karpinski, JV D'Agostino, A-EK Williams, SA Highland and JA Mellott [73] by which the scholars declared that social media consumers had lower ranking than learners who would never participate in social communications. Nevertheless, there are common advantages correlated with social media users. [74] clarified that social media are sources of communication, collaboration and interactivity, amongst research lecturers and students in their own faculties. Additionally, S Cooke [75] suggested that social media did not affect academic performance of the students'. Furthermore, a research by [76], tried to examine the connection amongst students' academic performance and Facebook. Conclusions showed that that there is considerable negative association among students' academic performance and Facebook use. People Surveyed described devoting less times per week studying on average versus nonusers. Majority said that they used their Facebook accounts at least once daily, this is consistent with the results of [77].

## 3. RESEARCH METHODOLOGY

The selected research model included undergraduate and postgraduate social media users to examine TC theory in order to measure students' satisfaction and students' academic performance. The data were obtained using 5-point Likert scales, including demographic elements of the TC variables. The questionnaire that was physically circulated asked all respondents to provide feedback on the use of social media for TC and their opinions about its influence on students' satisfaction and students' academic performance. The data were collected randomly from Universiti Utara Malaysia (UUM) and International Islamic University Malaysia (IIUM) and analyzed using IBM SPSS and Structural Equation Modeling (SEM-Smart PLS). These are considered the most important statistical methods in our study and consisted of two stages. In the first, the validity of measures, measure convergence validity, and discriminant validity of the measure were conducted, and the structural model examination was performed in the second. This

method was suggested by Hair *et al.* [78]. The sample size representative of the farmers in this study is 309 undergraduate and postgraduate students. It is determined based on the Krejcie and Morgan's sample size calculation which is the same as using the Krejcie and Morgan's sample size determination, which is expressed as below equation [79]. The Krejcie and Morgan's sample size calculation was based on  $p = 0.05$  where the probability of committing type I error is less than 5% or  $p < 0.05$ .  $S = \frac{X^2 NP(1-P)}{d^2 (N-1) + X^2 P(1-P)}$ , whereby (S) is the required sample size, (N) the population size, (P) represents the population proportion (assumed to be 0.50 since this would provide the maximum sample size). (d) is the degree of accuracy expressed as proportion (0.05) and ( $X^2$ ) is the table value of chi-square for 1 degree of freedom at the desired confidence level (0.05).

**3.1 Measurement Instruments and Data Collection**

As mentioned previously, 345 sample questionnaires were distributed among the students during the May 2019 semester, and 309 of the collected copies were analyzed. In terms of online communication (OC) six items, motives to communicate (MC) six items, communication self-efficacy (CS) six items, and attitude towards use (AT) six items were adopted from [80]. In addition, measurements of students' satisfaction (SS) were performed using five items, all of which were derived from [8]. Finally, students' academic performance (AP) was measured using six suggested indicators from [13].

**4. RESULTS AND ANALYSIS**

The result of Cronbach's Alpha reliability coefficient was 0.912 of the (online communication, motives to communicate, communication self-efficacy, attitude towards use, students' satisfaction and academic performance). The evaluation of discriminant validity (DV) was conducted through the use of three criteria namely: index among

variables which should be below 0.80 [78], the average variance extracted (AVE) value of each construct that needs to be equal to or above 0.50, and square of (AVE) of each construct that has to be above, in value, then the inter construct correlations (IC) connected with the factor [78]. Furthermore, confirmatory factor analysis (CFA) results with factor loading (FL) should be 0.70 or over while the results of Cronbach's Alpha (CA) are agreed to be  $\geq 0.70$  [78]. The researchers also add that composite reliability (CR) should be  $\geq 0.70$ .

**4.1 Measurement Model and Instrumentation**

The beginning stage in the assertion of the legitimacy and dependability of the model is the use of the Partial Least Square. Basic Equations Modelling (PLS-SEM), Smart PLS 2.0. Preceding the theories were tried, two phases were used to affirm the fitness model's integrity. In like way, build legitimacy that spreads components loadings; composite unwavering quality, Cronbach's alpha, and merging legitimacy was determined. The recommendation given by [81] in light of making use of the standard test to affirm discriminant legitimacy was used.

**4.2 Construct Validity of the Measurements**

Develop legitimacy is delineated as the level to which the things used to gauge a component can appropriately quantify the idea they were meant to quantify [78]. The entire things used to gauge the develops should stack essentially to their individual develops rather than different builds. This was guaranteed by leading an orderly audit of writing in the mission to deliver things that have as of now been set up and tried by earlier writers. On the premise of the component analysis, it was affirmed that things were reasonably named to them develops as they showed high loadings on them stood out from various develops (See Table 1).

**Table 1:** Factors Loading and Cross-Loading of items

Factors	Items	AT	CS	MC	OC	AP	SS
Attitude towards Use	AT1	0.812513	0.492830	0.519101	0.495666	0.491474	0.539835
	AT2	0.825838	0.442931	0.447509	0.457286	0.484788	0.538209
	AT3	0.704489	0.415351	0.390799	0.449089	0.391030	0.467414
	AT4	0.842891	0.441040	0.461312	0.496037	0.533168	0.570962
	AT5	0.836441	0.451729	0.467675	0.517161	0.568067	0.617407
	AT6	0.836360	0.484610	0.458842	0.529318	0.564676	0.619070
Communication Self-Efficacy	CS1	0.403391	0.736649	0.593420	0.414150	0.435770	0.426489
	CS2	0.395107	0.784199	0.501284	0.361548	0.406560	0.414992
	CS3	0.334277	0.746561	0.424206	0.309085	0.374887	0.335959
	CS4	0.368044	0.773858	0.435127	0.327171	0.381762	0.360270
	CS5	0.399912	0.779809	0.457948	0.354519	0.369049	0.388142
	CS6	0.577935	0.755063	0.492433	0.554714	0.530089	0.541537
Motives to Communicate	MC1	0.416326	0.507815	0.789940	0.361988	0.409187	0.404592

	MC2	0.425650	0.499662	0.816295	0.372979	0.431589	0.435362
	MC3	0.445868	0.528128	0.830027	0.399656	0.424962	0.442986
	MC4	0.405714	0.490165	0.793859	0.392057	0.392941	0.405891
	MC5	0.521606	0.542500	0.824603	0.520180	0.539806	0.537481
	MC6	0.519558	0.544724	0.829855	0.481552	0.511849	0.530562
<b>Online Communication</b>	OC1	0.489283	0.431003	0.442056	0.780994	0.510735	0.524259
	OC2	0.425322	0.397071	0.360673	0.770862	0.441304	0.452811
	OC3	0.427931	0.423466	0.420045	0.774908	0.435233	0.474494
	OC4	0.514392	0.423515	0.417069	0.844488	0.506555	0.562223
	OC5	0.528626	0.437154	0.445289	0.823148	0.564046	0.578089
	OC6	0.523620	0.431947	0.437902	0.828760	0.511098	0.569301
<b>Academic Performance</b>	SAP1	0.475174	0.386865	0.397010	0.504162	0.759623	0.572176
	SAP2	0.521860	0.423100	0.439591	0.517544	0.815042	0.577772
	SAP3	0.502798	0.445862	0.486667	0.464970	0.807569	0.569817
	SAP4	0.480683	0.487004	0.458079	0.450867	0.804998	0.523691
	SAP5	0.524037	0.476642	0.457295	0.531576	0.841608	0.611923
	SAP6	0.554005	0.506743	0.496414	0.541871	0.848075	0.595779
<b>Students' Satisfaction</b>	SS1	0.607338	0.438112	0.460255	0.527465	0.584831	0.825793
	SS2	0.584502	0.484427	0.503967	0.542633	0.583500	0.825110
	SS3	0.551838	0.497356	0.510568	0.568272	0.615566	0.860977
	SS4	0.606061	0.472457	0.464426	0.579579	0.616657	0.878124
	SS5	0.575878	0.455176	0.473546	0.566747	0.593410	0.836232

### 4.3 Convergent Validity of the Measurements

The composite reliability values differed from 0.926084 to 0.893047 and they are everywhere throughout the prescribed cut-off estimation of 0.70, with Cronbach values contrasting from 0.900086 to 0.858377, over the prescribed cut-off estimation of 0.60. In addition, the normal change removed

(AVE) values contrasted from 0.714882 to 0.582008 (all surpassed the cut-off estimation of 0.5), with critical element loadings surpassing 0.50. These qualities all went over the prescribed an incentive by [78, 81]. Table 2 presents the CFA results of the measurement model.

**Table 2:** Convergent Validity

Factors	Items	Factors Loading	Composite Reliability	AVE	Cronbach's Alpha	R Square
<b>Attitude towards Use</b>	AT1	0.812513	0.920026	0.658014	0.895314	0.477512
	AT2	0.825838				
	AT3	0.704489				
	AT4	0.842891				
	AT5	0.836441				
	AT6	0.836360				
<b>Communication Self-Efficacy</b>	CS1	0.736649	0.893047	0.582008	0.858377	0.000000
	CS2	0.784199				
	CS3	0.746561				
	CS4	0.773858				

	CS5	0.779809				
	CS6	0.755063				
<b>Motives to Communicate</b>	MC1	0.789940	0.921878	0.663022	0.898734	0.000000
	MC2	0.816295				
	MC3	0.830027				
	MC4	0.793859				
	MC5	0.824603				
	MC6	0.829855				
<b>Online Communication</b>	OC1	0.780994	0.916560	0.647040	0.890877	0.000000
	OC2	0.770862				
	OC3	0.774908				
	OC4	0.844488				
	OC5	0.823148				
	OC6	0.828760				
<b>Academic Performance</b>	SAP1	0.759623	0.921327	0.661508	0.897337	0.537992
	SAP2	0.815042				
	SAP3	0.807569				
	SAP4	0.804998				
	SAP5	0.841608				
	SAP6	0.848075				
<b>Students' Satisfaction</b>	SS1	0.825793	0.926084	0.714882	0.900086	0.479417
	SS2	0.825110				
	SS3	0.860977				
	SS4	0.878124				
	SS5	0.836232				

#### 4.4 Discriminant Validity of Measures

The level to which an idea and its pointers go astray from another idea and its markers is surveyed by discriminant legitimacy [82]. The AVE esteem is well over 0.50 and is critical at  $p=0.001$  and this shows that discriminant

legitimacy is bolstered for the whole builds [81]. In such manner, [78]clarified that the relationships between things in two develop ought not to surpass the square base of the normal fluctuation shared by a solitary develops things (See Table 3).

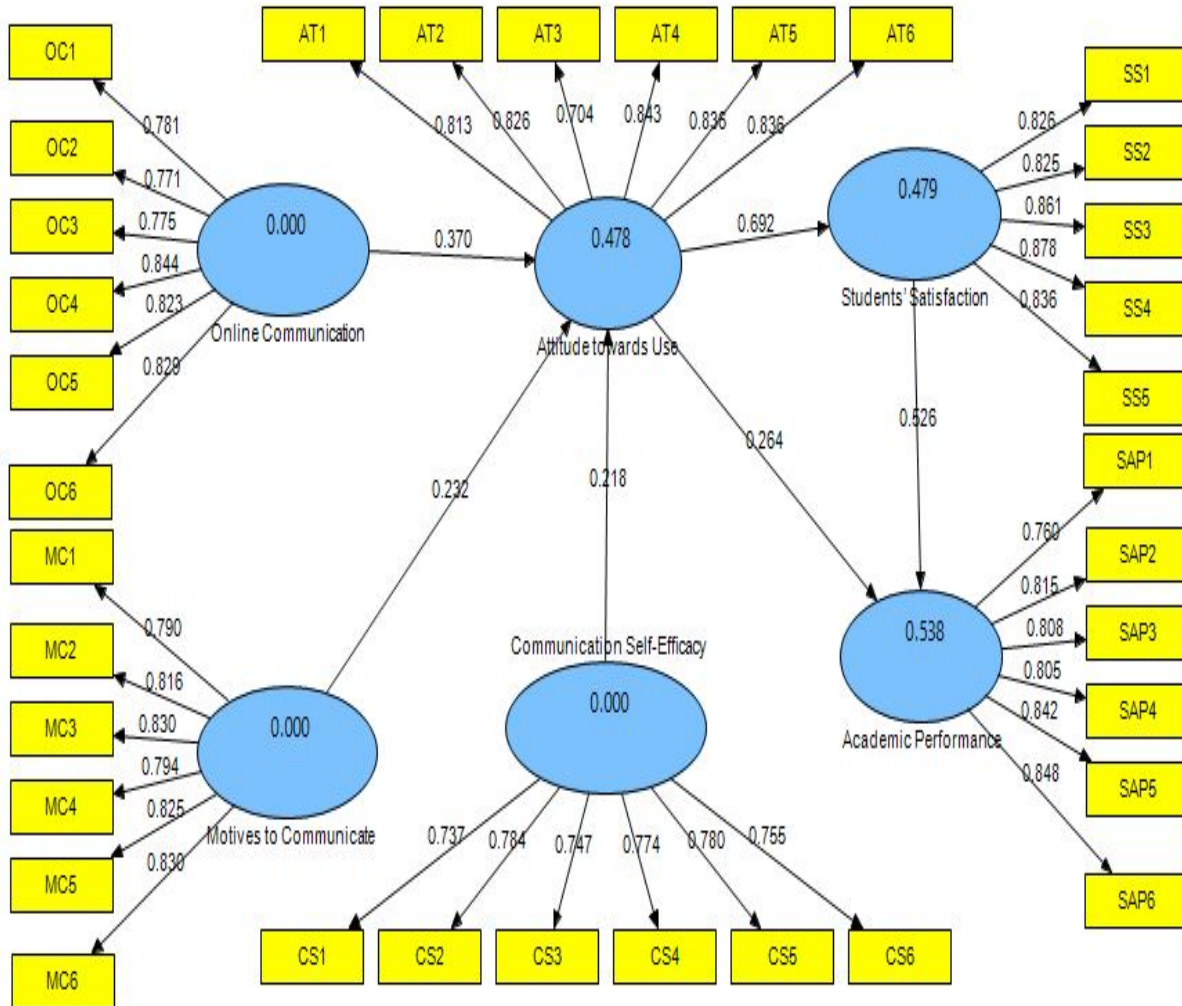
**Table 3:** Latent Variable Correlations

Factors	AP	AU	CS	MC	OC	SS
<b>Academic Performance (AP)</b>	1.000000					
<b>Attitude towards Use (AT)</b>	0.627773	1.000000				
<b>Communication Self-Efficacy (CS)</b>	0.558945	0.560948	1.000000			
<b>Motives to Communicate (MC)</b>	0.560804	0.565046	0.638823	1.000000		
<b>Online Communication (OC)</b>	0.618398	0.606222	0.527101	0.523931	1.000000	
<b>Students' Satisfaction (SS)</b>	0.708363	0.692400	0.555197	0.570442	0.658843	1.000000

**4.5 Analysis of the Structural Model**

Taking after the assurance of the integrity of the demonstrated estimation, the following stride involved the testing of the conjectured connections among the builds. The

specialist utilized the Smart-PLS 2.0 where the model was analysed by leading the PLS calculation. The way coefficients were then delivered as portrayed in Figure 2 and Figure 3, show the theories on table 4.



**Figure 2: Path Coefficients Results**



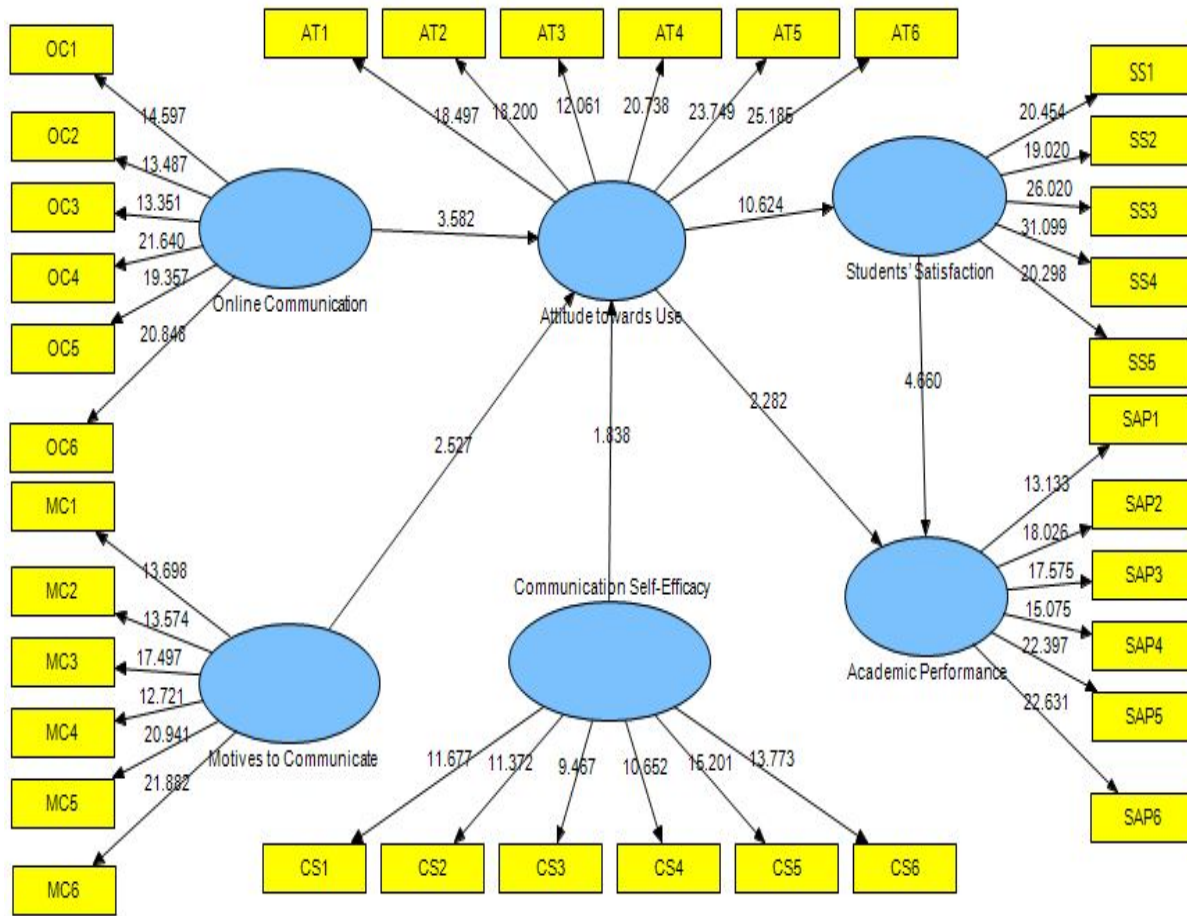


Figure 3: Path Coefficients T Values

Table 4: Hypotheses testing

H	Independent	Relationship	Dependent	Path Coefficient	Standard .E	T. Value	Result
1	OC	→	AT	0.369815	0.103239	3.582111	Supported
2	MC	→	AT	0.232246	0.091897	2.527230	Supported
3	CS	→	AT	0.217654	0.118442	1.837634	Supported
4	AT	→	SS	0.692400	0.065175	10.623688	Supported
5	AT	→	AP	0.263748	0.115593	2.281692	Supported
6	SS	→	AP	0.525744	0.112822	4.659944	Supported

Regarding the first hypothesis, the relationship between online communication and attitude towards use ( $\beta=0.369815$ ,  $t=3.582111$ ). Thus, H1 was supported. The second hypothesis is positive relationship as the analysis between motives to communicate and attitude towards use ( $\beta=0.232246$ ,  $t=2.527230$ ). Thus, H2 was supported. Next hypothesis number three the relationship between communication self-efficacy and attitude towards use ( $\beta=0.217654$ ,  $t=1.837634$ ). Thus, H3 was supported. Similarly, the relationship between attitude towards use and students' satisfaction ( $\beta=0.692400$ ,  $t=10.623688$ ). Thus, H4 was supported. And the fifth hypothesis the relationship between attitude towards use and academic performance ( $\beta=0.263748$ ,  $t=2.281692$ ). Thus, H5 was supported. Finally, hypothesis number six the relationship between students'

satisfaction and academic performance ( $\beta=0.525744$ ,  $t=4.659944$ ). Thus, H6 was supported.

### 5. DISCUSSION AND IMPLEMENTATIONS

The goal of this study was to analyse the effect of students' communication via various social media platforms on the academic performance of university students. The study contributes to the body of knowledge with empirical evidence of the direct effect on educational performance for university students. The support for all the hypotheses proved that communicating via social networking sites has an adverse effect on students' academic performance. This research contributes to present IS theory in a number of ways by extending the contributions of Shannon and Weaver (1949) through combining their theory and incorporating further variables to study the effects of Online

communication, motives to communicate and communication self-efficacy as the most influencing factors on social media effects on SAP and developed the artefact of this study with significant correlations among the supported hypotheses has been achieved accordingly. Diversity of aspects affecting interactivity has been proven by previous studies in multiple research fields associated to social media usage. These factors are based on communication theory and shows significant correlation among the supported hypotheses. Despite much literature on the negative consequences of the usage of communication related technologies, the effect of communication and attitude towards usage of social media platforms on AP received very little attention in the literature. In addition, while scholars have tended to focus on either the positive or negative issues of social media platforms addiction in the present research, we have attempted to understand the processes involved, that is, how communication affects the attitude towards use and the strong positive impact on students' academic performance in university level. The outcomes of the present research are indicating some of potential managerial implications. Recent studies discovered the evaluation of the students' performance based on Internet of Things [83-85] which subsequently related to communication devices usage and social media applications usage. This indicates the possibility of high volume of communication technologies usage among university students. This suggests that higher education authority or managers may consider various facilities and activities to ensure positive attitude towards use of social media platforms for educational purposes within the campus. For example, free academic journals membership, unlimited access, different learning platform access developed by the university and so on. The result of the study also underpins that academic leaders such as head of schools and faculty deans can choose the best candidates for their institution for further in-depth study.

### 5.1 Conclusion and Future Work

The study shed lights on the factors of SS and SAP related to the utilization of social media for the purposes of learning and communication among university students from an integrated perspective based on communication theory. The outcomes of this research suggest that if students have greater online communication, motives to communication, communication self-efficacy, attitude towards use, which in turn increase SS and SAP. Thus, the outcomes demonstrated the factors with greatest influence on the utilization of social media platforms for the purposes related to learning and communication, which in turn affect SS and SAP. The model developed by this research is recommended be employed as a supportive tool for investigation the utilization of social media platforms for learning and communication purposes to enhance students' satisfaction and academic performance other higher education institutes. This study was limited only to influential factors of attitude towards use of social media for communication and learning. However, there are other various factors which could lead to investigate. Thus, further exploration should also assess the students' intention to continue or discontinue

using social media for communication and learning to gain a better understanding of discontinuous and continuous usage intention. Based on geographical limitation, this study gathered data only from respondents in Malaysia. Thus, cross-cultural research in broader geographical sample distribution regarding the utilization of social media platforms for communication and learning might provide findings in more depth for future research. The data collected for this study was constrained to two universities in Malaysia. Further studies are recommended to which collect data from a larger number of students from multi-institutions in order to enhance and generalize the findings.

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