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Impact of information and communication overload syndrome on the Performance of Students

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Abstract

The purpose of this study is to analyze the impact of information and communication overload syndrome. This study follows a quantitative methodology and will adopt a survey research design. The survey method will allow the researcher to gather quantitative data and analyze it using descriptive and inferential statistics. The results of this study revealed that there are significant differences among the performance of students on the basis of gender differences. In

conclusion, both the participants' males and females are negatively affected by information and communication overload syndrome.

Keywords: Information, Overload, Communication, Gender, Performance.

Impacto del síndrome de sobrecarga de información y comunicación en el rendimiento de los estudiantes

Resumen

El propósito de este estudio es analizar el impacto del síndrome de sobrecarga de información y comunicación. Este estudio sigue una metodología cuantitativa y adoptará un diseño de investigación de encuesta. El método de encuesta permitirá al investigador recopilar datos cuantitativos y analizarlos utilizando estadísticas descriptivas e inferenciales. Los resultados de este estudio revelaron que existen diferencias significativas entre el desempeño de los estudiantes en función de las diferencias de género. En conclusión, tanto los hombres como las mujeres de los participantes se ven afectados negativamente por el síndrome de sobrecarga de información y comunicación.

Palabras clave: Información, sobrecarga, comunicación, género, desempeño.

1. INTRODUCTION

Information and communication overload syndrome is the root cause of counter-productivity in the performance of students. In recent years due to technological advancements, the word of information and communication overload is not that new. Social networking including

blogs, emails, and other sources students get abundant information. Due to technological advancement students are connected with each other. This excessive connection because of social media used by the students where they share their ideas and feelings between communities causes information and communication overload syndrome (ASAD, SHARIF & ALEKAM, 2016; HAIDER, ASAD & FATIMA, 2017).

Various tests are available to check the level of understanding of any student. By assigning the tasks one can easily check the understanding and comprehension level of a student. Several researchers are conducting studies on information overload. It has been more focused on the education sector because students have a lot of loads related to assignments, projects, term papers, and thesis. They have to manage many things at the same time so the pressure increases time to time as students in the field of psychology face many things at a similar time (CSIKSZENTMIHALYI, MIHALY, & ROBINSON, 2014). In other words, Information overload is used to deliver the notion and receiving more than necessary information in very little time. Among the students it has been observed that the term is now taking place and has been increasing at an alarming rate. This is providing the synonyms and is now related to the cognitive overload and sensory overload for the university students.

If university students have to study many subjects together and the assignments of the subjects have to be done by the students on a regular basis. The communication factor has overloaded the supply of information. They have to perform this in a very short time then they

will see the errors. Therefore, the material will not be absorbed by them in an effective way. The efficiency and effectiveness both of students will suffer (DEANDREA, NICOLE, ELLISON, CHARLES, & FIORE, 2012).

The researchers have explained; communication has led to the overloading. Basically, the concept of information overloading is way beyond what an individual can think. The issue of communication overload has not been addressed seriously due to which students fail to understand the root cause behind their declining performance but in the last years the issue can be observed clearly. A significant decrease in the admission of students in the psychology department has been witnessed. The main reason behind this declining trend is burnout because of excessive communication and information overload. The data of Social Sciences department of University Utara Malaysia from year 2010 to 2015 has shown worst trends.

Table 1: UUM CAS student registration

Program / Year	2010	2011	2012	2013	2014	2015
PhD	142	152	151	183	151	144
Sarjana	660	668	783	841	736	618
Total	802	820	934	1024	887	762

Considering the above statistics this study has been planned to cater to those factors that are creating the issue which results in the decline rate of enrolment of students in higher education in University Utara Malaysia. The root cause behind this declining trend is

communication and information overload. The problem is with the information and also with the communication factors. Due to these factors the students have to face problems. Due to the problems their performance decreases. This study has been tailored to identify gender differences in the effect of information and communication overload syndrome. In light of the above discussion, the study aimed to fulfill the objective of identifying the influence of information and communication overload syndrome on the performance of students. Furthermore, the study will focus on any gender difference, means the difference in the impact of information and communication overload on the basis of gender.

2. THEORETICAL FRAMEWORK

The theoretical framework includes analyzing information and communication overload syndrome and that can cause the overload of the work. Thus, a theoretical framework is developed on the basis of two variables that explain the relationship among the dependent and independent variable along with gender as a control variable and performance as dependent variable in figure 1 that is shown below:

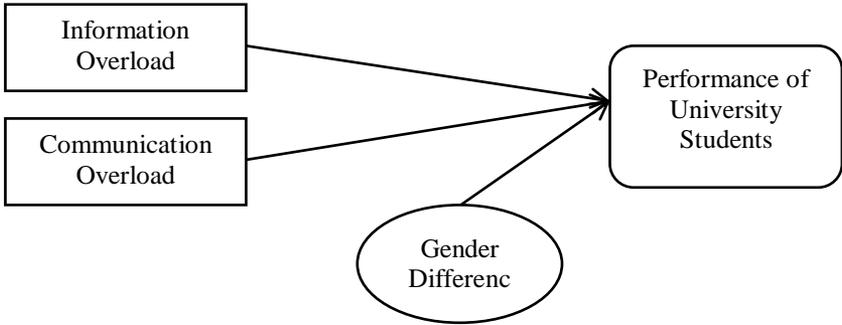


Figure 1: Conceptual Research Model

The abovementioned research framework has identified the basic linkage among independent variables that are information and communication overload and the dependent variable which is performance of university students (CHO & LEE, 2016). Furthermore, the framework highlights the controlling effect of gender differences which may change the level of effectiveness of information and communication overload syndrome.

3. METHODOLOGY

This section discusses research design which refers to the philosophical framework within which data will be gathered and analyzed. Finally, the population of the study which is the students of University Utara Malaysia has been described, determination of sample size and sampling frame has been discussed along with data

collection techniques followed by the data collection procedures. The purpose of the research was to analyze the controlling influence of gender over the relationship between information and communication overload syndrome and performance of university students. This study includes information overload syndrome and communication overload syndrome as independent variables. Gender is taken as a controlling variable. The performance of university students is taken as a dependent variable.

This study follows a quantitative methodology. This study will adopt a survey research design. The survey method will allow the researcher to gather quantitative data and analyze it using descriptive and inferential statistics. The purpose of collecting primary data was that in the situation under analysis secondary data may not suit well. For conducting the study cross-sectional data was gathered. For this study the estimated data collection period is three months. In the research unit of analysis were university students of final semester of University Utara Malaysia, showing individual as a unit of analysis (HAIDER, ASAD, ATIQ & FATIMA, 2017).

In this study measurement of the variable was conducted through close-ended questionnaires. To measure the items Likert scale was used. In the current study varying number of items were used to measure different variables. The determination of sample size table given by Zikmund was used (BASHIR & ASAD, 2018). All the data was entered into SPSS 22 for conducting descriptive analysis. Then PLS-3 has been used for structural equation modeling (HAIDER, ASAD & ALMANSOUR, 2015). PLS-SEM is the most appropriate

technique for theory building and testing of models. Almost 250 questionnaires were filled by the students of CAS. The response rate was good because the students were easy to approach and the questionnaires were distributed to them with in the campus.

The analysis of normality is compulsory before structural equation modeling (HAIR, SARSTEDT, RINGLE, & MENA, 2013). To check normality Skewness and Kurtosis have been applied in this study. According to GOUWS & TARP (2016), skewness value should be below 3 and kurtosis value should be below 8. Based on the recommendations of GOUWS & TARP (2016), the calculated values of Skewness and Kurtosis in this study are below the threshold level of < 2 and < 7 , respectively.

Table 2:

Variables	Skewness	Kurtosis
Information overload	1.78	4.38
Communication overload	2.21	4.27
Time management	1.36	4.57
Stress management	1.98	5.14
Performance of students	2.01	3.81

To check the issue of multicollinearity VIF and tolerance have been calculated the value of tolerance should be above 0.10 and the value for VIF should be less than 10. Multicollinearity Test based on Tolerance and VIF Values

Table 3:

Variables	Tolerance	Variable Inflation Factor (VIF)
Information overload	0.52	2.586
Communication overload	0.82	2.488
Time management	0.51	1.290
Stress management	0.52	1.309

4. EVALUATION OF PLS-SEM

After an initial screening of the data, the next step was to analyze the outer model and inner model. Smart PLS 3.0 was used to determine causal links among the constructs in these theoretical models.

In PLS-SEM analyzing reliability and validity are the two main criteria. The instrument’s reliability has been measured through Cronbach’s alpha, Composite Reliability (CR), and Average Variance Extracted (AVE). The value of Cronbach’s alpha is considered acceptable if it is above 0.7. Likewise, the threshold level for CR is above 0.7 (ENGLISH & KITSANTAS, 2013). Another very important test is to calculate AVE, the value above 0.5 is considered as good and acceptable. The calculated values for the variables used in the study are as follows:

Table 4: Cronbach’s Alpha

Variable	Cronbach’s Alpha	Composite Reliability	AVE
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Student performance	0.81	0.71	0.57
Information overload	0.82	0.78	0.61
Communication overload	0.87	0.77	0.57
Time management	0.85	0.75	0.55
Stress management	0.88	0.78	0.54

On the basis of the analysis, it would be right to say that the outer model confirms that the survey items measure the variable for which they were designed, which ensures that they are reliable and valid. The measurement model is given below:

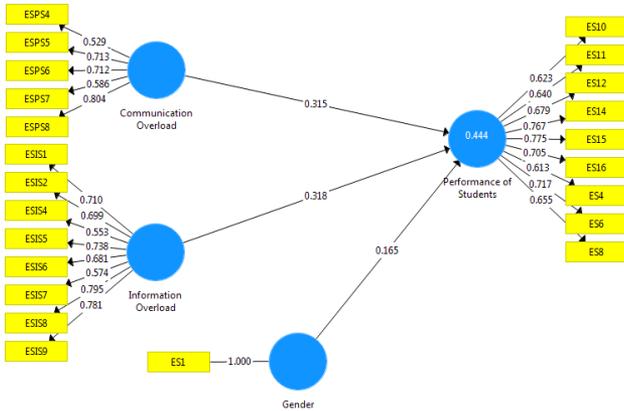


Figure 2: Measurement Model

In this study, systematically structural equation modeling was conducted. Structural equation modeling was done to understand Hypotheses 1 to 2 comprehensively. For a number of cases, original number of cases was used, and 5,000 were considered as bootstrapping

samples (HAIR, RINGLE, & SARSTEDT, 2013). In the first model direct relationships were analyzed between independent and dependent variables (H1 to H2).

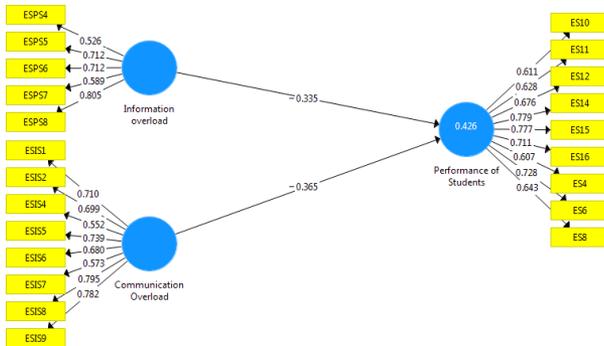


Figure 3: PLS Algorithms Direct Relationships

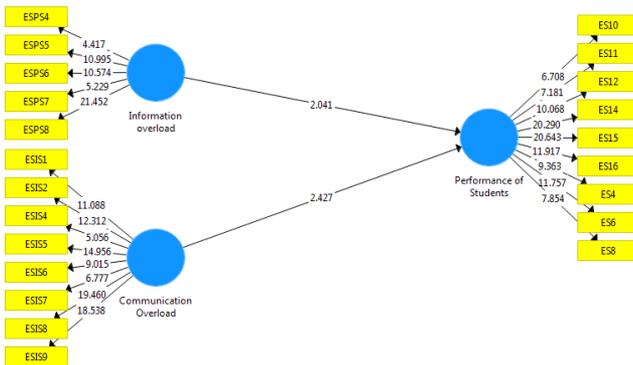


Figure 4: PLS Bootstrapping Direct Relationships

On the basis of the PLS-SEM algorithm and bootstrapping as highlighted in the figure, it is clear that the path coefficients of information overload and communication overload have a major

influence on performance of students. The analysis showed that all of the independent variables have shown a negative coefficient with the dependent variable. The bootstrapping showed that the relationship between information overload syndrome, communication overload syndrome, and performance of students at University Utara Malaysia is significant at $p < 0.05$. The table presents the path coefficients, t-statistics, and p-values.

Table 5: Result Hypothesis Testing (Direct Relationships)

Paths		Beta	Sample Mean	Standard Deviation	T values	P Values	Decision
IOS -> Performance of Students		-0.335	0.359	0.125	2.041	0.001	Supported
COS -> Performance of Students		-0.365	0.258	0.134	2.427	0.003	Supported
R ² 0.426							

Controlling Effect: In this study, the controlling effect of gender has been identified; the results have shown that gender has a significant effect means there are significant differences over the impact of gender for the effect of information and communication overload syndrome over the performance of all students.

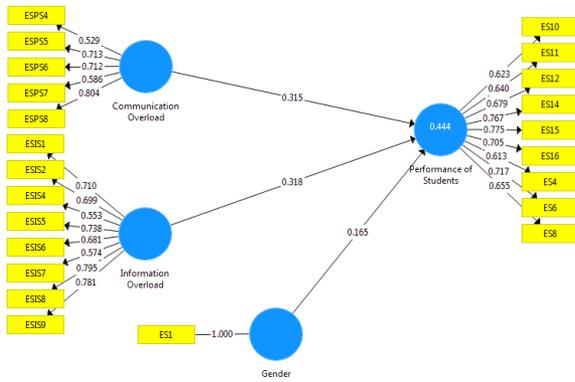


Figure 5: PLS Algorithms Gender Effect

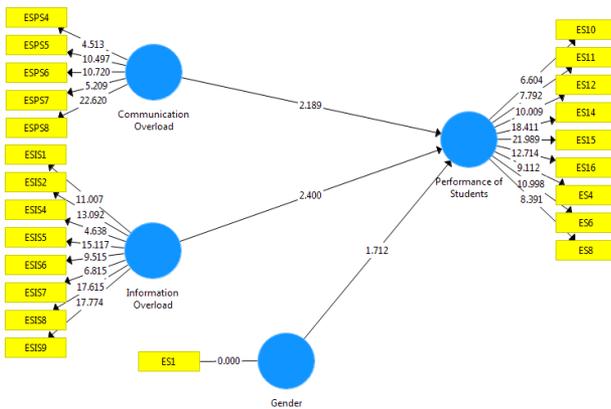


Figure 6: PLS Bootstrapping Gender Effect

The descriptive, when segregated with male and female, showed a major difference between the impact overall students. The study thus showed that influence on performance of students because of information and communication overload syndrome is different among different genders. Males and relatively less affected by the information and communication overload syndrome as compared to females.

5. CONCLUSIONS

In conclusion, on the basis of analysis it is highlighted that there are significant differences on the basis of gender in the performance of students at University Utara Malaysia. Information overload affects performance on the basis of gender. Females are more prone to have low level of performance when information overload syndrome affects them as compared to males. The result of the study showed that both the participants' males and females are negatively affected by information and communication overload syndrome. As the information increases and there is a gender difference than performance decreases. There is a significant difference among gender, information overload and performance. Therefore, this study indication of the significant differences among all the variables.

The overall outcomes recommend huge contrasts between males and females in regards to the relationship among gender, information overload and communication overload and performance of students at University Utara Malaysia. In particular, females see an essentially more grounded negative relationship between information and communication overload syndrome. The future researchers are guided to expand the horizon of study and measure the same influence over the students of other universities as well as other countries.

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