

## Students' perception of e-Learning during the Covid Pandemic: a fresh evidence from United Arab Emirates (UAE)

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### Abstract

To examine the role of online learning on student's perceptions during the recent pandemic from the 364 participating respondents' parents and students from (Grade 1 to 12). The respondents' data were analyzed through structural equation modelling (SEM) and the study confirm that 4 out of 4 of exogenous factors examined impacted learning positively, and 3 out of 4 impacted motivation positively. Besides, both study implications and limitations are also discussed under this study.

**KEYWORDS:** Online Learning, Student Perception, Student Engagement, Motivation, COVID-19, UAE.

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### 1. Introduction

The students' and children learning during the recent time has been heatedly debated among the various educators, scholars, and policymakers (Andrew et al., 2020; Aubrey & Dahl, 2008; Domingues-Montanari, 2017; Kim et al., 2019; Tottenham et al., 2019; Fawaz et al., 2021; Thach, 2021). It is believed that online learning helps the children to understand the abstract concepts along with collaborative learning, problem solving, and various creative activities (Dong, et al. 2020).

Researchers like Stephen and Plowman (2002) have suggested the argument that online learning through

various digital technologies is to be observed as a multimodal lifeworld for the young children. For this reason, these should be contextualized and capitalized to support the teachers and parents as well regarding how best to utilize set of digital technologies. In addition, online learning is defined as the learning experience through utilizing the internet and related facilities where different students can engage themselves with the teachers and other students based on their time and place factors (Singh & Thurman, 2019). Meanwhile, online learning has been observed as growing with a fastest rate during the time of last and recent decade due to flexible time, place, and pace of the study along with the wider variety and quantity of information with lower financial cost for the students as well as for the educational institutions. However, researchers have shown their deep concern about the quality of education in online learning due to variety of factors. At the same time, some scholars believe that various factors like social isolation, lack of interactivity and participation along with the delayed in the timely response or the feedback have their direct impact on the title of online learning of the students. At the same time, the learning of young children has also been debated and criticize by various scholars because of variety of risk factors involved in it.

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However, in lowering the potential impact of various risk factors in online learning, the role of parents is observed as a mediator. For this reason, it is quite obligatory for the parents to examine the usage of online services by their children (Nouwen & Zaman, 2018).

Another point as observed in the present literature is that it is entirely missing while observing the student perception about the online learning during the recent outbreak of COVID-19. For this reason, present study has tried to fill this gap both in theoretical and empirical perspective specifically from the context of students of grade 1 to 12 in the region of UAE. This would justify one of the most significant contribution as provided by the present study. The empirical outcomes of the study confirm that student perception in terms of motivation and learning has been significantly affected by the variety of factors as observed under present study. The rest of the paper is organized as follows. Section two covers the research methods, framework and hypotheses, section three shows the study findings, while section four provides the discussion and conclusions.

During the recent and past time, both theoretical and empirical studies have provided their valuable contribution while observing the title of online learning. Dong et al. (2020) stated that online learning is widely promoted by the various educational institutions in the world economy comparatively to face to face learning during the recent outbreak of COVID-19. For this purpose, their study has targeted the parents of 3275 Chinese students during the recent pandemic. It is observed that most parents (more than 92 percent) reported that their children had an online learning experience during the outbreak. However, it is also observed that various parents believe that traditional learning model in the form of face to face method is more suitable for the early childhood setting. Hamilton et al., (2020) claim that Student pharmacists have significant exposure in terms of online learning in their relative education. To access their research questions, authors have created an online survey consists of 47 items which was delivered to schools and colleges of pharmacy students in the region of United States. For data analysis, their study has applied frequency distribution to judge the student preferences. It is found that out of total sample of 1873 students, 30 percent have shown their preferences for a blended course covering both classroom components and online components. However, 47 percent students have preferred online lectures. Additionally, the technique of utilizing the smart phones is observed as quite valuable for 57 percent students. It is concluded that pharmacy students in US have preferred blended form of learning.

Yates et al. (2020) claim that COVID-19 pandemic has resulted in the closing of New Zealand schools while covering the teaching through online and digital media. For judging the student experience about online learning during this pandemic, the study conducted by Yates et al. (2020) has utilized the framework of Kearney et al.

(2012) which provides the three dimensions to focus named as personalization, authenticity, and finally the collaboration as well. For data analysis, both qualitative and quantitative techniques have been applied. It is found that authenticity and collaboration factors have their direct impact on the student learning.

Adnan and Anwar (2020) examine the online learning during COVID-19 while taking the sample from Pakistani higher education students. The findings through online survey indicate that online learning is unable to produce the valuable and desired results in the country like Pakistan due to the fact that various students cannot get the right access of internet facility along with some technical and monetary issues.

Dhawan (2020) explain that in the Indian region, the educational institutions like schools, colleges, and universities are based on the traditional approaches like face-to-face model. He further indicates that sudden outbreak of COVID-19 has dramatically changed the world specifically the education sector and WHO has already announced it as a pandemic which has challenged the education sector in all the countries. His article has covered the strength, weakness, opportunities, and threats for the e-learning models at the time of this crisis. Furthermore, his study also provides some valuable suggestion for the academic institutions regarding how to deal with such issues which are linked with the online learning model. Aliyyah et al., (2020) try to examine the perception of primary school teachers about the online learning in Indonesia for the program named as School from home during COVID-19. With the help of surveys and semi-structured interviews with the 67 class teachers in the primary schools, the results of the study confirmed that factors like instructional strategies, support, and motivation of the teachers, learning between the teachers, schools, and parents have their impact on the success factor of the student.

Meanwhile, the success of online learning factor in the region of Indonesia during this pandemic is depending upon the technological readiness along with the national humanist curriculum, collaboration and support from different stakeholders, and local community. Besides, there are studies having their theoretical and empirical contribution in the field of online learning (Agarwal & Kaushik, 2020; Agung et al., 2020; Allo, 2020; Baber, 2020; Khalil et al., 2020; Syauqi et al., 2020). To the best of our knowledge, there is a wide gap in the existing literature for examining the student perception about online learning specifically in the region of UAE. For this reason, present study has covered this gap while proposing a conceptual and empirical framework taking the students of grade 1 to grade 12 under observation for exploring the impact of four latent constructs on the motivation and learning of the students. This research would reasonably fill the available gap along with providing some useful pathways for the upcoming studies in the field of e-learning, related tools, and

techniques along with the student perception about the online learning.

## 2. Research Methods, Framework and Hypotheses

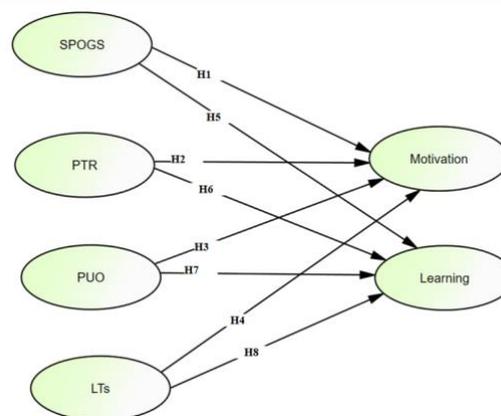
In terms of methodology, this research is quantitative in nature while following the deductive research approach. For data collection, four exogenous variables entitled as, self-perception of own general skills (five items), perception about teacher’s roll (four items), perceived utility of online (four items), and learning tools (four items) were selected based on the existing literature. For the measurement of student perception, two main endogenous variables named as motivation (four items), and learning (four items) were selected and under observation. The measurement of all the stated items is based on the five-points Likert scale ranging from 1 as strongly disagree, 2 as disagree, 3 as undecided, 4 as agree, and 5 as strongly agree. After finalizing the questionnaire, the targeted respondents were students and their parents. More specifically, from grade 1 to 10, parents were selected as the targeted respondent due to the fact that respondents have their lower age for understanding and filling of the questionnaire. Additionally, for grade 11 to 12, students were targeted as key respondents. Initially 550 copies were distributed among the parents and students during December 2021 which were finally collected till February 2021. It is observed that the total number of collected copies were 423 while the remaining were not returned by the respondents. Detailed review of the collected copies indicate that 59 copies were found as not valid enough with missing information from the respondent. Finally, a sample of 364 copies were found to be valid enough with no missing data. Therefore, our study is based on the sample of 364 from both parents and students.

For data analysis, our study initially applied the descriptive statistics covering the mean, standard deviation, kurtosis, and skewness as well. After descriptive outcomes, confirmatory factor analysis was applied, and score are discussed. Finally, our study has applied the structural equation modelling under AMOS-21 to examine the direct relationship between the study variables. Figure 1 below shows the research framework along with the research hypotheses ranging from H1 to H8, where H1 means self-perception of own general skills (SPOGS) has its positive and significant impact on students’ perception about online learning in terms of motivation. Similarly, H2 to H8 were developed and depicted under Figure 1.

## 3. Results

Table 1 shows the descriptive scores of the study variable, based on the total number of observations against each item, mean and standard deviation,

skewness, and kurtosis. It is found that for all the items of the study variables, total number of valid observations were 364 with no missing data.



**Figure 1** - Research Framework and Hypotheses (H1-H8 showing direct relationship between the variables)

Source: Author’s Estimation.

Note: SPOGS means Self-perception of own general skills, PTR means Perception on the teacher’s roll, PUO means Perceived utility of online, LTs means learning too.

However, the trend for the mean score is observed as ranging from 2 to above 3. More specifically, it is found that maximum mean score for the SPOGS3 is 3.21 with the standard deviation of 1.18. On the other side, the mean trends in the data for PTR items is observed as 3.78 for PTR2 and 3.67 for PTR1 along with their relative score of standard deviation. Perceived utility of online is measured through four items with the mean score of above 3. Additionally, learning tools is measured through four items with the lowest mean score as reflected by LTs1 and highest for LTs3.

Finally, the measurement for two major endogenous variables is based on the four items based on the five-points Likert scale. It is observed that only the mean score for Learn2, Learn4 and Mot4 are above 3 whereas rest of the variables have shown their mean score of below 3. After examining the descriptive scores of the study variables, present study has examined the measurement model with the help of confirmatory factor analysis or CFA. It is observed that various earlier studies have conducted the CFA for the measurement model.

The results for the CFA outcomes are shown with the help of Figure 3. It is observed that some items were deleted from this output model like SPOGS1, PTR4, POU4, and LTs3 as well. These items were deleted due to the loadings of below 0.50. However, all those items which have provided the factor loading of above 0.50 have been considered under present study analysis.

Table 2 shows the loadings of the study items. It is observed that factor loadings for the three items of SPOGS are 0.676, 0.976, and 0.716, respectively. On the other side, the value of factor loadings for PTR are 0.662, 0.802, and 0.722 under Table 2 and Figure 2 of

Items	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
SPOGS1	364	3.1841	1.00778	.030	.128	-.751	.255
SPOGS2	364	3.2088	1.10113	-.197	.128	-.945	.255
SPOGS3	364	3.2170	1.18746	-.337	.128	-.832	.255
SPOGS4	364	3.1181	1.22634	-.164	.128	-1.013	.255
SPOGS5	364	2.5247	.93121	.422	.128	-.815	.255
PTR1	364	3.6703	.85673	.293	.128	-.469	.255
PTR2	364	3.7857	.93786	.379	.128	-.433	.255
PTR3	364	2.7225	.97203	.345	.128	-.875	.255
PTR4	364	3.3214	1.07743	-.109	.128	-1.143	.255
PUO1	364	3.4258	1.03253	-.834	.128	.131	.255
PUO2	364	3.3407	1.15441	-.380	.128	-.522	.255
PUO3	364	3.4038	.97012	-.755	.128	-.094	.255
PUO4	364	2.6209	1.04140	.131	.128	-.710	.255
LTs1	364	2.6731	1.12827	.403	.128	-.775	.255
LTs2	364	2.7115	1.22498	.412	.128	-.841	.255
LTs3	364	3.7555	.87707	-.808	.128	.246	.255
LTs4	364	2.5632	1.48968	.420	.128	-1.231	.255
Mot1	364	2.6209	1.04140	.131	.128	-.710	.255
Mot2	364	2.6786	1.12251	.412	.128	-.764	.255
Mot3	364	2.7115	1.22498	.412	.128	-.841	.255
Mot4	364	3.6209	1.42941	.426	.128	-1.004	.255
Learn1	364	2.5302	1.09427	.468	.128	-.279	.255
Learn2	364	3.4698	1.13869	.683	.128	-.296	.255
Learn3	364	2.5989	1.07749	.400	.128	-.445	.255
Learn4	364	3.5907	1.08839	.520	.128	-.437	.255
Valid N (listwise)	364						

Table 1 - Descriptive Statistics.

Items	Direction	Variables	Estimate
SPOGS2	<---	SPOGS	.676
SPOGS3	<---	SPOGS	.976
SPOGS4	<---	SPOGS	.716
PTR1	<---	PTR	.662
PTR2	<---	PTR	.802
PTR3	<---	PTR	.722
PUO3	<---	PUO	.792
PUO2	<---	PUO	.820
PUO1	<---	PUO	.639
LTs4	<---	LTs	.840
LTs2	<---	LTs	.962
LTs1	<---	LTs	.698

Table 2 - Standardized Regression Weights: (Group number 1 - Default model) CFA Loadings.

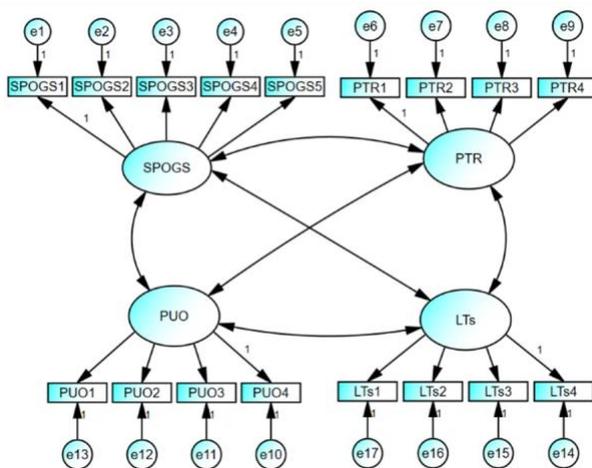


Figure 2 - Measurement Model Through CFA, Source: Author's Estimation.

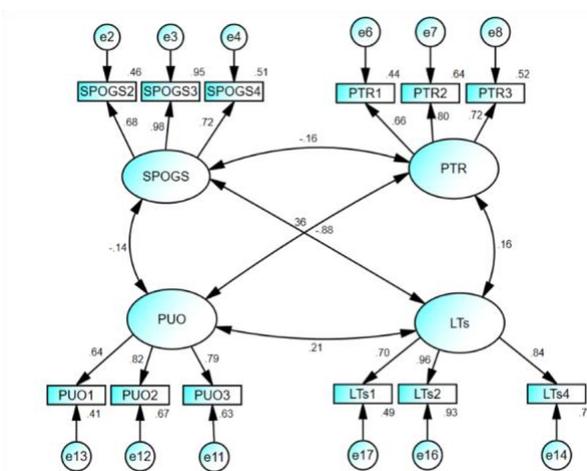


Figure 3 - Output for CFA, Source: Author's Estimation.

the study. Additionally, the factor loadings for PUO items were 0.792, 0.820, and 0.639, respectively. Lastly, the loadings for LTs items were observed as 0.840, 0.962, and 0.698, respectively.

More specifically, the loadings for all four items of motivation were 0.865, 0.663, 0.668, and 0.934. Additionally, the loadings for learning items were 0.790, 0.844, 0.847, and 0.784, respectively. This would justify the argument that there was no need to delete any single item for both endogenous due to the issue of lower loadings, hence all four items for each of the dependent variables were considered for the structural equation modelling.

After analyzing the output for the measurement model with the help of factor loading, Figure 5 shows the structural input model of the study covering all four exogenous constructs along with the first endogenous variable named as motivation of the student which is measured through all four items along with the relative error terms. The output for this structural model has been presented under Table 3 to test the direct relationship between the study variables.

The results under Table 4 show that Self-perception of own general skills or SPOGS has its positive and significant impact on motivation. This impact is justified with the help of regression coefficient of 0.982 and standard error of 0.052. Both of these values have provided the critical ratio of 18.855 with the p-value of significant at 1 percent level of significance. It means that higher level of self-perception of own general skills is leading towards the creation of more motivation among the students from Grade 1 to Grade 12 in the region of UAE. However, on the other side, the impact of perception on the teacher's roll-on student motivation level is observed as positively insignificant at 5 percent. The results under Table 4 have confirmed that perceived utility of online or PTR is positively and significant determining the level of motivation among the targeted sample of students. This means that for the students, the role of PTR is found to be highly significant in motivating them towards online learning. Additionally, the last exogenous variable is entitled in terms of those learning tools which are observed under online learning. It is observed that there is a significant and positive impact of LTs on motivation among the students (i.e., coefficient= 0.863, 0.270, C.R=3.196, p-value=0.000).

Items	Direction	Variables	Estimate
Mot4	<---	Motivation	.865
Mot3	<---	Motivation	.663
Mot2	<---	Motivation	.668
Mot1	<---	Motivation	.934
Learn4	<---	Learning	.790
Learn3	<---	Learning	.844
Learn2	<---	Learning	.847
Learn1	<---	Learning	.784

Table 3 - Standardized Regression Weights: (Group number 1 - Default model).

Endogenous	Directions	Exogenous	Estimate	S.E.	C.R.	P
Motivation	<---	SPOGS	.982	.052	18.885	***
Motivation	<---	PUO	.128	.625	0.205	
Motivation	<---	PTR	.632	.287	2.202	**
Motivation	<---	LTs	.863	.270	3.196	***

Table 4 - Structural Equation Modelling Output for Figure 4.

Title	Statement	Remarks
H1	Self-perception of own general skills (SPOGS) has its positive and significant impact on students' perception about online learning in terms of motivation.	Supported
H2	Perception on the teacher's roll (PTR) has its positive and significant impact on students' perception about online learning in terms of motivation.	Not Supported
H3	Perceived utility of online (PUO) has its positive and significant impact on students' perception about online learning in terms of motivation.	Supported
H4	Learning tools has its positive and significant impact on students' perception about online learning in terms of motivation.	Supported

Table 5 - Summary of the Hypotheses for the Relationship between Exogenous Constructs and Level of Motivation

Endogenous	Directions	Exogenous	Estimate	S.E.	C.R.	P
Learning	<---	SPOGS	.226	.033	6.920	***
Learning	<---	PUO	.879	.074	11.885	***
Learning	<---	PTR	.476	.068	6.947	***
Learning	<---	LTs	.229	.025	9.082	***

Table 6 - Regression Weights: (Group number 1 - Default model).

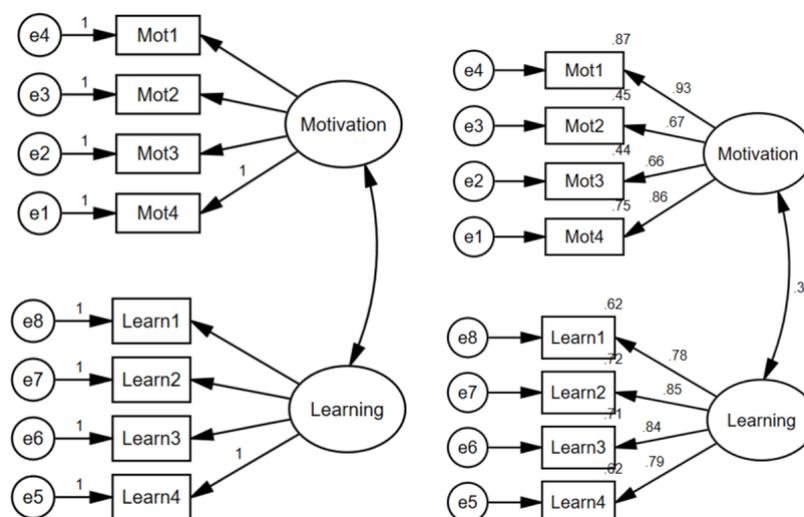


Figure 4(a) and 4(b) - Measurement model and loadings. Source: Author's Estimation.

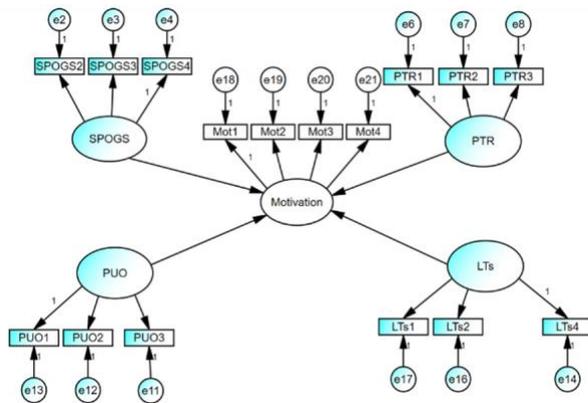


Figure 5 - Structural Model (Input) for Key Exogenous Constructs and Motivation. Source: Author's Estimation.

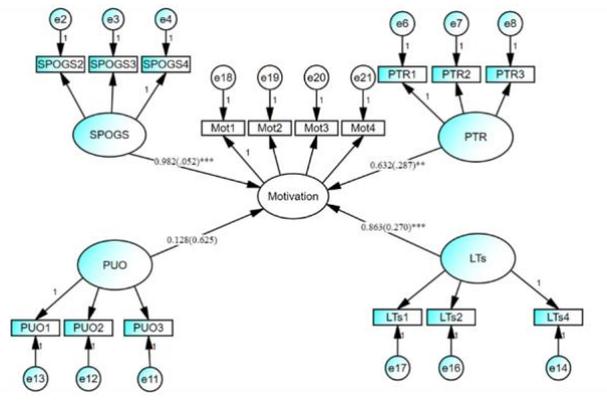


Figure 6 - Structural Model (Output) for Key Exogenous Constructs and Motivation. Source: Author's Estimation.

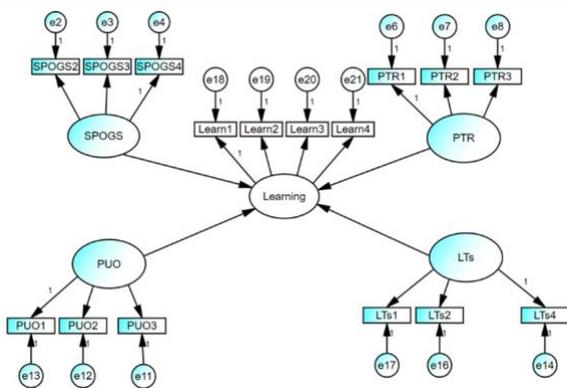


Figure 7 - Structural Model (input) for Key Exogenous Constructs and Learning. Source: Author's Estimation.

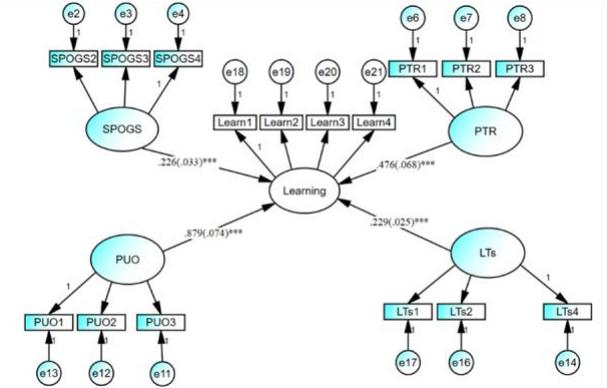


Figure 8 - Structural Model (Output) for Key Exogenous Constructs and Learning. Source: Author's Estimation.

Based on the study findings under Table 4, Table 5 shows the summary of the hypotheses for the relationship between exogenous constructs and level of motivation among the students which is a first measure of student perception about online learning. The Structural input model under Figure 7 shows the relationship between four exogenous variables and second dependent variable named as learning of the students.

The results for the second structural model are shown in Table 6 of the study. It is found that there is a significant and positive impact of SPOGS on learning, providing the evidence that higher Self-perception of own general skills means higher learning and vice versa. Similarly, the results under Table 6 also confirm that Perception on the teacher's role is causing a positive shift in the level of learning with a fact that unit change in PUO is causing a change of 0.879 in the level of learning for the targeted sample under current study. Furthermore, Perceived utility of online also shows a positive impact on learning with the coefficient of 0.476 and standard error of 0.068. This would claim that higher perceived utility of online learning is putting a positive impression towards the student learning from online classes. At the same time,

the findings under Table 7 are in favor for accepting the alternative hypotheses that PTR and LTs are causing more learning among the students in UAE. This statement is supported through regression estimates of 0.476 and 0.229, respectively in Table 6.

Title	Statement	Remarks
H5	Self-perception of own general skills (SPOGS) has its positive and significant impact on students' perception in terms of learning.	Supported
H6	Perception on the teacher's roll (PTR) has its positive and significant impact on students' perception in terms of learning.	Supported
H7	Perceived utility of online (PUO) has its positive and significant impact on students' perception in terms of learning.	Supported
H8	Learning tools has its positive and significant impact students' perception in terms of learning.	Supported

Table 7 - Summary of the Hypotheses for the Relationship between Exogenous Constructs and Level of Motivation.

#### 4. Discussion and Conclusions

During the time of recent pandemic of COVID-19, the trends in business and educational institutions have been changed dramatically from face-to-face model to online learning and teaching. This would justify the significance of online learning both in developed and developing economies on equal platform, however, the trends of online learning in developed economies is much different comparatively to one in the developing economies. This study has tried to examine the student perception about the online learning during the recent pandemic. For this purpose, four exogenous constructs were under observation to analyze the trends in two factors of student perception entitled as level of motivation and learning as well.

The results through structural equation modelling have confirmed that factors like Self-perception of own general skills (SPOGS), perceived utility of online (PUO), and learning tools (LTs) are showing their significant and positive impact on the value of student's motivation. Additionally, the impact of Self-perception of own general skills, perception on the teacher's roll, perceived utility of online, and learning tools are showing their significant and positive influence on the learning factor of the students from grade I to grade 12.

The findings under present study would be great support to various policy makers specifically in the education sector, where the role of general skills of the student, utility of online, learning tools like utilization of blackboard, zoom, and many others, and the teacher's role are good to provide some strategic guidelines. At the same time, present study has provided a good contribution in the existing literature of student perception about online learning and its key determinants both in theoretical and empirical perspective.

However, this study is also associated with the various limitations too.

Firstly, present study has considered the student community from Grade 1 to 12 with no focus on the university students.

Secondly, the sample under present study consists of students and their parents, however, future studies can also consider the sample in terms of university teachers, administration officials, and management persons as well.

Thirdly, this study is also missing while providing the cross-sectional comparisons regarding which grade students are showing their higher positive attitude towards online learning.

Based on all three limitations, future studies are highly recommended to consider them for better outcomes and some significant literature contribution both in theoretical and empirical perspective as well.

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