Student Satisfaction in Online Learning of Islamic Higher Education in Indonesia during the Second Wave of COVID-19 Pandemic

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Abstract

This study aims to determine student satisfaction with online learning at UIN Raden Mas Said Surakarta Indonesia. In this study, the researchers developed new variables related to student satisfaction in online learning, such as student commitment, student independence, parental support, main source of support for online learning, student readiness, creative and innovative learning and effectiveness and behavioral intentions. The methodology used is a quantitative research method, with measurement and analysis using the smart-PLS application. The population in this study was all students of the UIN RMS Surakarta education faculty. The results of this study show that there were 412 respondents who filled out the questionnaire. After being processed using Smart-PLS there were three variables that were accepted: first, effectiveness has a significant effect on student satisfaction in online learning, second, student commitment has a significant effect on student satisfaction in online learning and third, student satisfaction has a significant effect on the behavioral intentions of students in online learning.

Contents

Contribution of this paper to literature
This study not only provides an overview of the variables that need to be considered by an educator, but also shows these variables should receive more emphasis compared with other variables. This is because effectiveness, commitment and satisfaction have a significant impact on satisfaction itself, as well as on the intensity of student behavior in learning.

1. Introduction

The year 2020-2021 has been a challenging year for world health. However, it does not end there as the economic and education sectors have also experienced equally serious impacts. From the beginning of 2020 till today, countries all over the world have implemented distance learning or online learning systems to prevent the spread of the Covid-19 virus. Unpreparedness in the early days of the pandemic for online learning had to be faced by almost all countries. A study found that higher education institutions in Romania were not very prepared for online learning; as a result serious technical problems cropped up, followed by the lack of technical skills among teachers which resulted in their teaching styles not being able to adapt well to the online environment (Coman et al., 2020). Another study revealed that facility readiness had a significant effect on student satisfaction (Kumar, 2021). In addition, some countries were beginning to show an increase in stress and anxiety due to the Covid-19 outbreak. Several stressors were identified as contributing factors to the increase in stress levels, anxiety, depression and difficulty in concentration experienced among students (Son, Hegde, Smith, Wang & Sasangohar, 2020).

The results of research in developed countries such as France and South Korea show that the majority of French students express a preference for learning in face to face classrooms compared with online classes, while the preferences of Korean students are more balanced. On the average, Korean students express higher satisfaction with online learning compared with French students (Jung & Vranceanu, 2020).

In the past, online learning was only used for conducting courses, meaning that it was not completely done routinely, as in Alison, Canvas Network, Coursera, iCourse, EdX, etc. (UNESCO, 2020), all of which provide online courses with very interesting programs. The duration of time and continuity of learning are factors that impact the difference between online learning and online courses and research results clearly show that online learning in these courses has a very significant impact. The Covid-19 pandemic has been prevailing for more than a year; the unavoidable result is distance learning/online learning. Distance learning however provides opportunities to experiment with alternative teaching methods, tools and assessment styles (Alolaywi, 2021). Even more interesting, it was found that the WhatsApp Group platform became the most effective learning media at the beginning of the Covid-19 pandemic (Wargadinata, Maimunah, Eva & Rofiq, 2020). In order to follow up on online learning, practitioners in the field of education do not stop creating and innovating so that the new learning methods can make students understand and be satisfied with their progress and achievements. One of the learning objectives is to make students feel satisfied with the learning process. There are quite a number of studies that reveal the relationship of student satisfaction with various factors. In general, student satisfaction is influenced by perceived usefulness, perceived pleasure and effectiveness of multimedia content (Levent, Balcikanli, Calli, Cebeci & Seymen, 2013).

Information quality and self-efficacy have a significant effect on student satisfaction in online learning (Machado-Da-Silva, Meirelles, Filenga & Brugnolo Filho, 2014), in particular self-efficacy (Alzahrani & Seth, 2021). In addition, providing motivation in online learning is a most important dimension and has a significant impact on student satisfaction (Hariyati, Wagino & Mudjito, 2021; Hermida, 2020; Kirmizi, 2015) at the undergraduate and postgraduate levels in Bangladesh (Rahman, Uddin & Dey, 2021).

Communication and flexibility are also a very decisive part of student satisfaction in online learning (Elshami et al., 2021). The level of effort shown by the instructor, agreement on the appropriateness of the customized assessment method and the perception of well-delivered online learning prove to be very important in determining the satisfaction scores (Ho, Cheong & Weldon, 2021). The results show that the important factors in ensuring online learning satisfaction are the instructor's role in providing online media training and the strength of peer interaction (Nambiar, 2020; Nasir, 2020; Ngo, Budiyono & Ngadiman, 2021; Thach, Lai, Nguyen & Nguyen, 2021). This further confirms that technical readiness and interaction in online learning determine the level of student satisfaction. The higher the level of satisfaction felt by students, the more positive the impact on student performance (Gopal, Singh & Aggarwal, 2021) and student achievement will increase further (Basith, Rosmaiyadi, Triani & Fitri, 2020). This is a very important foundation where student satisfaction leads to good and maximum academic results.

In the areas of satisfaction and online learning, basically a lot of research has been done as described above, but in the present study the researchers are trying to develop other possible variables through various discussions held in Indonesia, that have an impact on online learning (Rohmah, 2020). The new variables that the researchers present, given the reason that these variables have never been associated with satisfaction and basically reside within students themselves, are very close to their scope, such as student commitment to learning, independence, parental support, main source of support for online learning, student readiness, creative-innovative teaching, effectiveness and intensity of behavior.

Some of these variables are very important to be investigated further, with the aim of uncovering the closest variables so that future learning can be managed properly. The various studies above were mostly carried out at the beginning of 2020-2021 so they were still included in the early categories of online learning experiments, while the present research was carried out in the mid-quarter of 2021 where online learning had become a new practice in educational institutions. Satisfaction is also a very important part where the measurement is based on students who learn through online learning organizations. With this research, the evaluation of online learning in an educational institution can be maximized.

2. Method

The methodology used is a quantitative research method with the calculation and analysis done using the smart PLS application.

The population in this study comprised all students majoring in education at UIN RMS Surakarta Indonesia. The questionnaire with 58 statements was distributed randomly through the google-form application.

Table 1. Respondent demographics.

Respondent	412		
Gender	77. 7% Female		
	22. 3% Male		
Department	Islamic Education (PAI), English Language Education (PBI), Madrasah Teacher Education (PGMI), Indonesian Language Education (TBI)		
Semester / level	Semester 2 : 44%		
	Semester 4 : 21.2%		
	Semester 6 : 34.1%		
	Semester 8 : 0.7%		
City	1. Sukoharjo	13. Madiun	25. Kuantan Singgigi
	2. Klaten	14. Tuban	26. Jakarta
	3. Sragen	15. Jepara	27. Kebumen
	4. Wonogiri	16. Blora	28. Pulo Gebang
	5. Boyolali	17. Pacitan	29. Lumajang
	6. Karanganyar	18. Magelang	30. Brebes
	7. Ngawi	19. Wonosobo	31. Gresik
	8. Magetan	20. Lamongan	32. Bangkalan
	9. Pati	21. Sleman	33. Rantauprapat Sumut
	10. Cilacap	22. Gunungkidul	34. Jember
	11. Grobogan	23. Padangsimpuan	
	12. Temanggung	24. Banjarnegara	
Internet Access	Wi-Fi : 16.5 %		
	Internet Credit : 83.5 %		
Platform	Zoom: 7%		
	Gmeet: 82.6%		
	Wa Group: 94.1 %		
	Youtube : 14.2%		
	Instagram: 3.4%		
	Google Clasroom : 22.8%		
	Blogspot: 3.8%		
	College Platform : 15.6%		

From Table 1 above, it can be seen that the respondents who filled out the questionnaire were dominated by female students who made up more than three quarters of the total number. All the students were from the education faculty, majoring, in subjects such as PAI, PBI, PGMI and TBI.

Their levels were quite diverse, ranging from levels or semesters 2, 4, 6 and 8. However, most of them were at level 2. These students came from various cities throughout Indonesia, but mostly from Central Java and East Java. In accessingthe internet, they used internet credit more than Wifi.

Meanwhile, the platforms used in online learning were diverse, but the ones that ranked highest were Google meet and Whatsapp Group. This indicates that learning has been maximized through face-to-face online classes.

The hypotheses in this study are as follows:

H1. Parental support for online learning at home significantly influences student satisfaction.

H2. Effectiveness of online learning at home significantly influences student satisfaction.

H3. Students' independence in online learning at home significantly influences student satisfaction.

H4. Student satisfaction significantly influences their decisions on online learning.

H5. Students' online learning readiness from home significantly influences student satisfaction.

H6. Commitment to online learning at home significantly influences student satisfaction.

H7. Learning from home through Innovative-Creative online teaching methods significantly influences student satisfaction.

H8. Good support for online learning at home significantly influences student satisfaction.

3. Results

a. Measurement Model Evaluation

In the process of data analysis, to meet the reliability and validity of the data, indicators that have a loading factor of 0.7 must be removed from the models, i.e calculations and non-parametric testing with all indicators that have a loading factor of 0.7, Cronbach's at≥ 0.7, Composite Reliability at ≥ 0.7 and AVE at ≥ 0.5 to assess convergent validity (Hair, Risher, Sarstedt & Ringle, 2019). Co linearity testing is done by looking at the value of the variance inflation factor (VIF); Burns and Burns (2008) stated that there is co linearity if the VIF value is 10.0. However, (Hair, Hult, Ringle & Sarstedt, 2014) recommend a maximum cut off at 5.0. The results of the reliability, validity and co linearity tests are presented in Table 2:

Table 2. Measurement model & VIF.

Variables (code)	Indicator	Outer Loading	CA	CR	AVE	VIF
Commitment (Com)			0.815	0.877	0.642	
X2	Students maximize their online learning	0.787				1.656
X3	Students read the material given by the lecturer	0.839				1.905
X4	Students re-read and understand the material that has been delivered	0.840				1.838
X6	Students actively confirm that they are on a path that is truly seeking knowledge	0.734				1.553
Independence (Ind)			0.790	0.864	0.614	
X9	Students actively seek primary reading sources for ongoing courses without being asked	0.814				1.867
X10	Students actively seek secondary/additional reading sources	0.803				1.886
X11	Students actively re-read the lecture material until they understand	0.799				1.579
X12	Students try to activate the classroom atmosphere by asking and giving opinions	0.713				1.306
Parent Support (PS)			0.807	0.865	0.563	
X13	Parents fully support their children's study schedules outside online learning	0.723				1.551
X14	Parents do not order / give work while their children are engaged in online learning	0.705				1.492
X15	Parents actively remind their children to engage in online learning	0.820				1.889
X17	Parents actively ask about all the needs of online learning, especially to support online learning	0.759				1.732
X18	Parents never blame anything related to student online learning	0.740				1.523
Main Source of Support (MSS)			0.758	0.892	0.805	
X23	Students actively visit campus online libraries, national libraries or other online libraries	0.899				1.593
X24	Students exchange books/e-books/journals with other students	0.895				1.593
Learning Readiness			0.801	0.870	0.627	
X25	Students prepare themselves before online learning begins	0.768				1.547
X26	Students actively read the material before the lecture starts	0.846				1.921
X27	Students actively seek and prepare references that have been suggested by the lecturer	0.817				1.820
X29	Students actively discuss material with friends outside the class schedule	0.731				1.421
Innovative and Creative Teaching (ICT)			0.899	0.922	0.663	
X31	Lecturers (in general) determine online media (Zoom, G-Meet, Whatsapp group, etc.) through deliberation	0.727				1.890
X32	Lecturers (in general) actively use various platforms for online learning media	0.840				2.411
X33	Lecturers (in general) provide material in the form of Power-points/Material Modules/Blogs/Journals/E-books (minimum 4)	0.769				2.095
X34	Lecturers (in general) are active in providing contextual discourse of the material being taught	0.859				2.800
X35	Lecturers (in general) not only deliver material but also sometimes give quizzes or motivation to lighten up the classroom atmosphere	0.851				2.517
X36	Lecturers (in general) actively conduct various ice-breaking activities.	0.830				2.347
Effectiveness (Eff)			0.875	0.909	0.667	
X37	Online learning teaches students to be more independent at managing time and studies	0.769				1.814
X38	Online learning makes students more active in expressing their opinions	0.858				2.858
X39	Online learning makes students learn not to be ashamed when they have an opinion to express	0.848				2.719
X40	Online learning makes time to study science unlimited	0.824				2.214
X41	Online lectures make all college activities and home activities more organized and scheduled maximally	0.780				1.851
Satisfaction (Sat)			0.820	0.893	0.736	
Y1	Online learning makes students more qualified in terms of academics	0.883				2.412
Y2	Online learning makes students more qualified from a professional viewpoint	0.872				2.301
Y8	I would tell anyone how good the quality of online learning is	0.817				1.494
Behavioral Intentions (BI)			0.929	0.943	0.701	
Y9	Online learning is the right answer for a better education now and in the future for me	0.788				2.374
Y11	I tell people that I get a lot of knowledge through online learning	0.823				2.394
Y12	I tell people that I enjoy online learning	0.853				2.914
Y13	I tell people that online learning makes me more independent	0.811				2.576
Y14	I will recommend to the public online learning as good and fun	0.870				3.392
Y15	I will tell the public that online learning makes students creative in learning	0.863				3.366
Y16	I will tell the public that online learning improves and broaden the horizons of thinking	0.848				3.031

Note: Unqualified variables have been excluded from model CR & Cronbach $\alpha \leq 0.7$, AVE ≤ 0.5, and VIF ≥ 5.0.

b. Structural Model Evaluation

After assessing discriminant validity, the model must confirm that all constructs have significant differences. This study used the heterotrait-monotrait correlation ratio (HTMT) as suggested by (Henseler, Ringle &

Sarstedt, 2015). HTMT is defined as the mean value of the correlations of items across constructs relative to the (geometric) mean of the mean correlations for items measuring the same construct. Discriminant validity problems arise when the HTMT value is high (Sarstedt, Ringle & Hair, 2021).

Table 3. Discriminant validity.

	PS	BI	Eff	Ind	Sat	LLR	Com	ICT	MSS
PS	0.751								
BI	0.313	0.837							
Eff	0.438	0.613	0.817						
Ind	0.346	0.352	0.463	0.784					
Sat	0.316	0.731	0.639	0.367	0.858				
LR	0.418	0.444	0.548	0.701	0.440	0.792			
Com	0.390	0.349	0.483	0.730	0.432	0.640	0.801		
ICT	0.338	0.331	0.507	0.468	0.352	0.590	0.454	0.814	
MSS	0.367	0.322	0.362	0.452	0.312	0.548	0.466	0.356	0.897

The recommended value for HTMT is < 0.90 (Sarstedt et al., 2021). Each item in Table 3 has a value of < 0.90, so it can be concluded that the model used meets the requirements of the discriminant validity test.

c. Predictive Accuracy and Relevancy

Accuracy and relevance of predictions were used to see how the independent variable affects the dependent variable. To determine the level of the predictive variable, the values of R^2 and Q^2 must be measured. To find the value of Q^2 on Smart PLS, it is necessary to take additional steps using the Blindfolding calculation ($Q^2 = 1 - SSE/SSO$). Variables that have R^2 of 0.75, 0.50 and 0.25 have a substantial (high), medium, and weak degree of analysis, while variables that have a Q^2 value greater than 0, 0.25, and 0.50 describe small, medium and large predictive power. This will further clarify the prediction accuracy of the variables being tested.
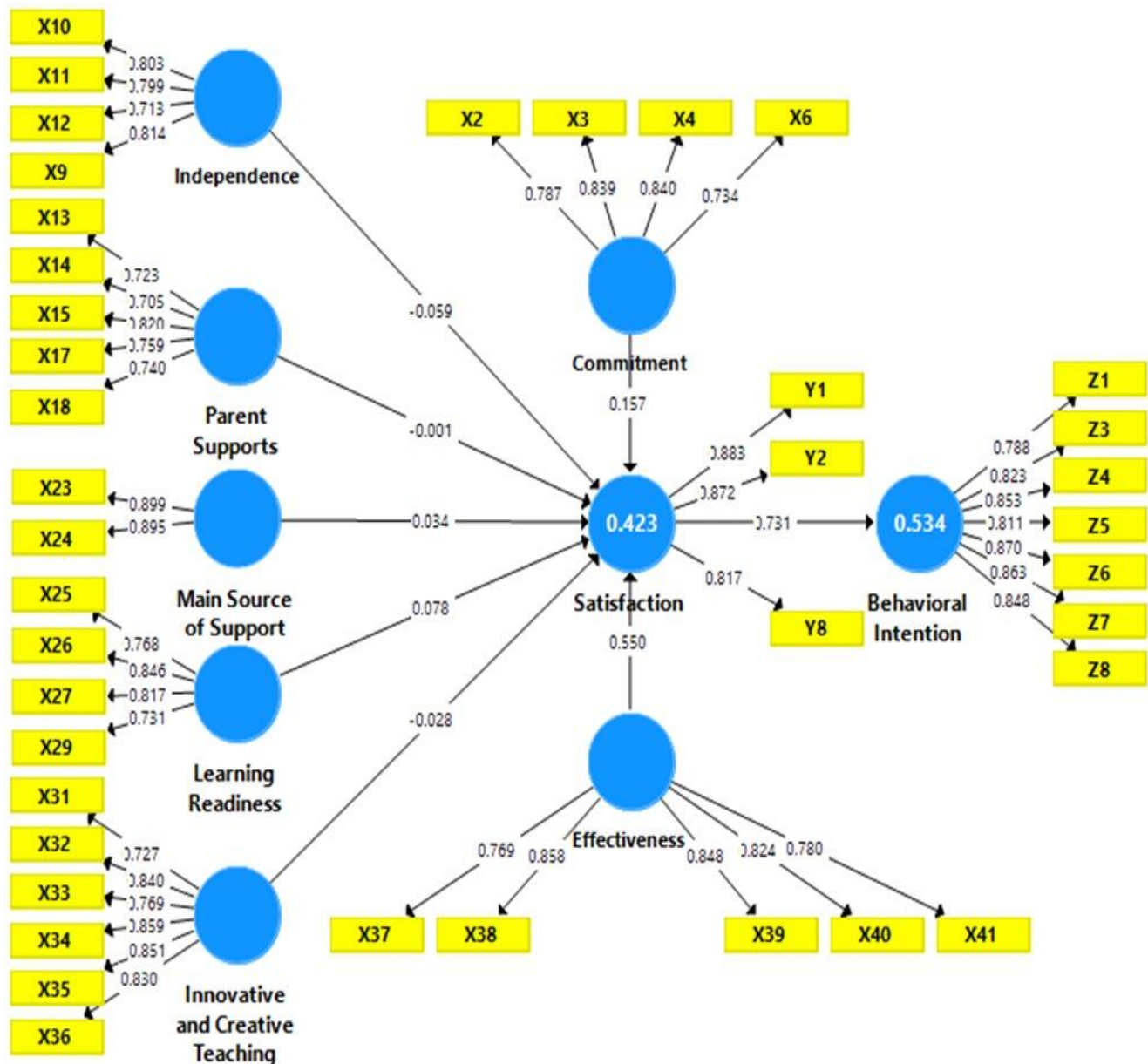

Figure 1. Structural model with adjusted R^2 values.

Table 4. Predictive accuracy and relevancy.

Variables (code)	R^2	R^2 Adjusted	Q^2	Effect Size	Predictive Accuracy
Satisfaction (Sat)	0.433	0.423	0.301	Weak	Medium
Behavioral Intention (BI)	0.535	0.534	0.369	Moderate	Medium

Path	SD	T-Statistics	P-Values	Decision
Parental Support – Satisfaction	0.051	0.029	0.977	Rejected
Effectiveness – Satisfaction	0.056	9.828	0.000**	Accepted
Independence – Satisfaction	0.068	0.875	0.382	Rejected
Satisfaction – Behavioral Intention	0.031	23.797	0.000**	Accepted
Learning Readiness – Satisfaction	0.074	1.050	0.294	Rejected
Commitment – Satisfaction	0.065	2.414	0.016**	Accepted
Innovative and Creative Teaching-Satisfaction	0.057	0.491	0.623	Rejected
Main Source of Support- Satisfaction	0.053	0.642	0.521	Rejected

Note: **p<0.01.

Figure 1 shows the results of structural testing with path coefficients and adjusted R^2 values and Table 4 shows a summary of the results of predictive accuracy and relevance. Satisfaction (Sat) and behavioral intention (BI) have adjusted R2 values, respectively, of 0.423 (weak) and 0.534 (moderate) with the level of accuracy at the medium level. Table 5 shows the results of hypotheses testing, effectiveness and commitment proven to have an effect on satisfaction, while satisfaction is proven to have an effect on behavioral intention.

d. Importance-Performance Matrix Analysis (IPMA)

IPMA is used to identify factors that are of significant importance for the development of a particular target construct, with low performance comparisons (Martilla & James, 1977). IPMA compares the total effect of the structural model on a particular target construct with the mean latent score variable of this construct's predecessor (Ringle & Sarstedt, 2016). There is a need here to present the most important factors, considering that this study was conducted during the Covid-19 pandemic.
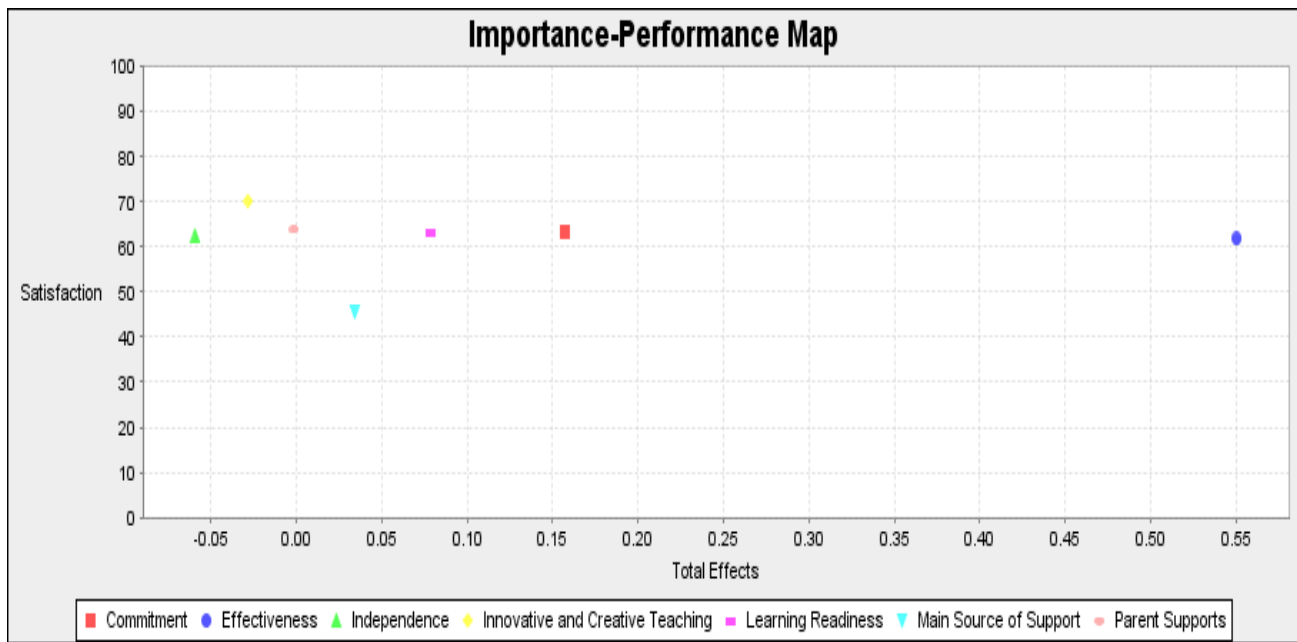

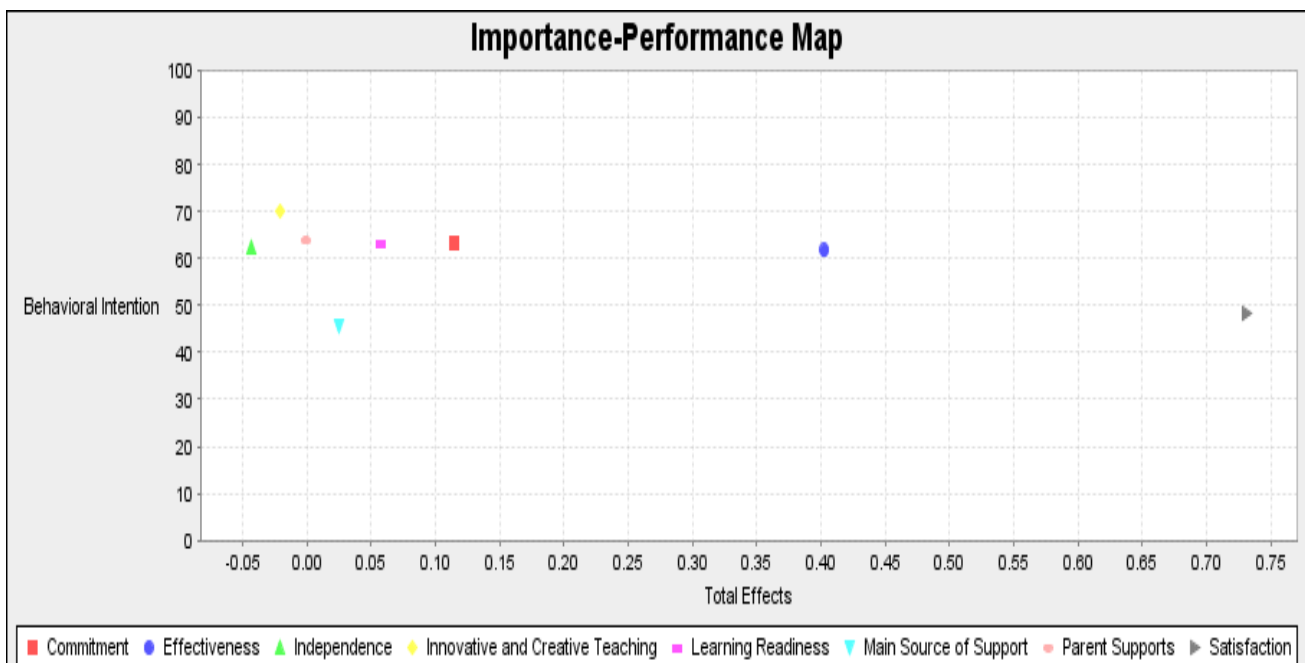**Figure 2.** IPMA satisfaction (standardized effect).

Figure 3. IPMA behavioral intention (standardized effect).

Figure 2 & Figure 3 show the results of the IPMA test on Satisfaction (Sat) and Behavioral Intention (BI). Based on the IPMA test, it can be proven that effectiveness (Eff) is the most influential variable on satisfaction (Sat) compared with the other variables (Commitment, Independence, Innovative and Creative Teaching, Learning

Readiness, Main Source of Support & Parental Support). Satisfaction (Sat) is the variable that has the most influence on Behavioral Intention (BI) compared with other variables in the model.

4. Discussion

There were 412 respondents who filled out the questionnaire. The results show that there are three variables that have a significant influence, namely student commitment, learning effectiveness and the relationship between satisfaction and the intensity of student behavior that takes place in online learning.

Examined individually and in depth, commitment is seen as one of the internal variables that exists in every student, which in the activity of online learning refers to the responsibility of students in lectures. Factors that affect commitment are the level of self-awareness, student personality and student performance (Anghelache, 2013). There are three levels of commitment, namely low, medium and high (Glickman, 2002). From the results above, it can be seen that students face various challenges in online learning and they have maximum responsibilities too, so that they are satisfied with the online learning which lasts for one year. The results of this study differ from the notion that satisfaction has an impact on commitment (Ranadewa, Gregory, Boralugoda, Silva & Jayasuriya, 2021) as in the present study, commitment as a variable is shown to have an impact on satisfaction. The results of the study reveal that lecturer commitment in teaching has a significant effect on student satisfaction (Sopiah & Sangadji, 2020).

In addition, the effectiveness factor in itself is a factor, though being external. It is also shown to have the closest impact on students engaging in online learning effectively and efficiently. This is seen in areas of time management, regularity, time allowance to develop potentials such as reading, completing assignments on time and making online learning a platform to improve y during practice. In short, satisfaction is attained when doubts are cleared. In the pre-covid-19 period, a study showed that the effectiveness of online learning basically had the same impact as traditional learning or classroom learning in general (Nguyen, 2015). However, although the results were the same, online learning could not be fully initiated (Hussain, Saeed, & Syed, 2020).

Meanwhile, a research identified that teaching effective and positive strategies resulted in good and fast learning outcomes (Raba, 2017). Furthermore, the overall effectiveness of online learning is based on everything that is received and done when students use online learning. The results of a research in secondary schools in Romania confirmed that students react differently to online education, and their reactions are based on their proficiency in using online tools, their ability to technically access online courses and the way instructors conduct learning activities (Butnaru, Niţă, Anichiti & Brînză, 2021).

The last factor is student satisfaction, where this leads to the intensity of student behavior in using online learning both now and in the future. Goals that lead to this intensity also refer to learning outcomes that make them more qualified academically and professionally. Thus, it is clear that the respondents or students in particular express their satisfaction in using online learning in the present and in the future.

The other variables rejected in this study indicate that the online learning journey provides different dynamics. However, this research has provided a maximum and comprehensive picture as educational institutions conduct online learning on an ongoing basis and students can already feel the various challenges that exist when they participate in online learning.

5. Conclusions and Recommendations

The results of this study indicate that, first, parental support has no significant effect on student satisfaction in online learning; second, effectiveness has a significant effect on student satisfaction in online learning; third, independence has no significant effect on student satisfaction in online learning; fourth, student learning readiness has no significant effect on students in online learning; fifth, student commitment has a significant effect on online learning; sixth, creativity and innovation have no significant effect on student satisfaction in online learning; seventh, the main source of learning support has no significant effect on student satisfaction in online learning and finally, student satisfaction affects the intensity of student behavior in online learning.

This research provides a complete picture where the online learning process has been carried out comprehensively and optimally. In addition, it reveals the new variables proposed in this study. The shortcoming in this study is that it is not directly related to the Covid-19 pandemic conditions that exist in research settings which tend to have different impacts. Recommendations for further research are to focus more on exploring and elaborating various other factors that may have a significant impact on student satisfaction. This will reveal the mediators that serve to strengthen the variables of commitment, effectiveness and satisfaction itself.

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