



VALUE CO-CREATION ACTIVITIES OF STUDENTS ON THE COVID-19 PANDEMIC: EMPIRICAL EVIDENCE FROM ECONOMICS STUDENTS IN VIETNAM

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ABSTRACT

This article is aimed to evaluate the determinants of the value co-creation activities of economic students in Vietnam in the context of the COVID-19 pandemic. This study collected primary data from 423 economic students and teachers in Vietnam. With linear regression models, main findings of this paper are: First, value co-creation activities of Vietnamese students are impacted by the following factors, sorted from strongest to weakest, namely: (i) Dialogue; (ii) Transparency; (iii) COVID-19 pandemic; (iv) Access to information; (v) Benefits; (vi) Interactive Attitude; (vii) Disadvantage. Second, we have developed the Interaction Attitude factor out of the Dialogue category, which focus on the two-way dialogues and the positive attitudes of stakeholders to encourage co-creation activities. This sub-factor is new compared to previous studies. Recommendations are proposed to help students, teachers, schools and partners to improve their attitudes, actions, and responsibility to contribute to the educational environment, then expand and enhance their scope of quality co-creation activities that contribute to the development of Vietnam's higher education system.

Keywords: Co-creation, Covid-19, Economics students, University education, Value.

INTRODUCTION

Vietnam has made a lot of innovation and development in the university education system but the quality of education still has several weaknesses. Programs are mainly specialized knowledge teaching and learning that are not fully practically applicable; the innovative approach in teaching and learning is quality facilities do not meet the needs of learning and research. Students' self-study and critical thinking capacities are insufficient.

To solve these problems, the value co-creation activity is one of the best approaches, as it encourages learners to participate in the process of providing educational services, designing educational products, and meeting learning and social needs, especially during the Covid-19 pandemic when learners have to completely switch to online learning. Using traditional pedagogical strategies to teach online is less successful and may be regarded as outmoded for effective learning and student achievement. Besides, when having to work from home to ensure safety during the Covid-19 pandemic, lecturers have to manage their responsibilities at home

and work while continuing to teach as usual (Johnson *et al.*, 2021). Proactive behaviors have been motivated significantly (Liu *et al.*, 2019) Therefore, both teachers and learners face obstacles and difficulties during online studying in terms of tools, means, skills, attitudes, and teaching and learning methods to ensure effective learning.

Studies on factors influencing value co-creation activities in university education remain limited. These researchers focused on examining the values and benefits of campaigns, including Schumann, Peters, and Olsen (2013); Dziejowska (2017). At the same time, current research is mostly oriented on areas requiring significant knowledge, and experience in the human body, thus the percentage of consumers participating in these activities remains low (Pham & Truong, 2018). As a result, based on inheriting and developing achievements from previous studies, the authors will concentrate on researching the factors that influence service receivers' participation in value co-creation activities. That is why the topic "*Value co-creation activities of students on the Covid-19 pandemic: Empirical evidence from economics students in Vietnam*" is chosen for this study.

Literature Review

Value Co-Creation Activities of Students

Value co-creation activities are the relationships that create value between businesses and customers, allowing clients to participate in developing ideas for products and services to match the market context (Prahalad & Ramaswamy, 2004; Wu *et al.*, 2022). The value co-creation process is where enterprises work in cooperation with all stakeholders (Hale *et al.*, 2013; Popp *et al.*, 2021).

Value co-creation activities in education mean that students and the school/enterprise are the main actors in each project with the mission of cooperation, and experience, thereby building ideas and perfecting products/services suitable to the social context. They had a substantial impact on students, professors, schools, and investors. First, they change the school positively from organizational structure to teaching methods, students have the experience of a more innovative, progressive school model (Kennedy & Guzmán, 2016). Second, Ngoc and Huy (2016) promote decision-making collaboration in the learning process, which allows students and lecturers to work together to refine the student experiences (Ngoc & Huy, 2016). Third, they promote organizational innovation, which has significantly positively impacted their performances (Phan, 2019; Popp *et al.*, 2021; Wu *et al.*, 2022).

Factors Affecting the Value Co-Creation Activities of Students in University Education

Dialogue

Dialogue is the interaction and participation from both sides, communicating between two parties in solving a problem. Prahalad and Ramaswamy (2004) and Hsieh (2015) stated that dialogue reflects the organization's ability to understand customer needs and satisfy their needs. Ballantyne and Varey (2006) argue that dialogue is not only exchanged to support value co-creation by developing the basis of interaction between stakeholders, but it also allows the creation and innovation and learning from each other. Fladkjær and Otreel-Cass (2017) found out that dialogue creates the basis for lecturers and students to understand and be motivated to improve existing problems in the curriculum. By using dialogue in this activity, the opinions of



participants serve as feedback on their service/product experiences. Participants in the value co-creation activities define dialogue as a method of learning and thinking that improves relationships between students and the institution. It is the combination of form and function in interaction that attracts teachers and learners to engage in collaborative actions to cooperatively create knowledge (Voetterl, 2002), as mentioned in the studies of Meng and Sun (2019) and Könings *et al.* (2021). These studies have confirmed the positive effect of the dialogue on Value Co-creation activities. Authors proposed:

H1. Dialogue has a positive impact on the value co-creation activities of economics students.

Access to Information

Kelley *et al.* (1990) defined accessibility as the ability of customers to have all the information they need to reduce uncertainty and take effective action in cooperation. Agulu and Aguolu (2002) pointed to the lack of availability of information sources as the cause of the increase in instability of universities within the federal, state, and interpersonal (students and faculty). According to Albinsson *et al.* (2016), accessibility refers to the level of openness or restriction that an organization has on information so that customers can access it. Furthermore, Prahalad and Ramaswamy (2004); Ferreira and Carayannis (2019); Cedstrand *et al.* (2021) claimed that "informed, networked and empowered consumers increasingly co-create value with the enterprise." Nguyen and Do (2022) also confirmed that good access to information is essential for knowledge sharing in universities. therefore, the factor "access to data" has a significant impact on the quality of students' activities.

H2. Access to information has a positive impact on the value co-creation activities of economics students.

Disadvantages and Benefits

Cook-Sather *et al.* (2014) argue that the main benefits that teachers, students, and schools receive from value co-creation activities include: participation, motivation, and learning; raising awareness of identity; enhancing the teaching experience; student-lecturer expands relationships and the development of a wide range of graduate attributes. Opposing the operational benefits, when the school decides to bring the campaign closer to students, there will be several disadvantages affecting the available power as well as the institutional structure and process in the university. Students are expected to collaborate with universities to improve learning, teaching, and participation in decision-making at all university management levels (QAA, 2012). Emerging research shows that students are a vital and frequently underutilized resource in higher education (Adeniyi *et al.*, 2020; Bisht & Pattanaik, 2021), and faculty and students also derive significant benefits from collaborative teaching and learning (Nygaard *et al.*, 2013).

Bovill *et al.* (2016) and Lubicz-Nawrocka (2017) pointed out the institutional inadequacies when both lecturers and students want to create certain knowledge values during the process of knowledge transmission. The impact of benefits and risks can be seen in the value of co-creation activities in university education.

To examine the impact of these factors, we have two hypotheses as follows:

H3.1 Disadvantage has a positive impact on students' value of co-creation activities.

H3.2 Benefit has a positive impact on students' value co-creation activities.



Transparency

Transparency is concerned with the extent to which the organization is willing to share information about the business, products, technologies, processes, systems, transaction costs, or concerns about security and profitability (Baquer, 2006). In education, transparency is demonstrated when both students and lecturers clearly understand each other's activities and the resources required (Dalsgaard & Paulsen, 2009). Transparent information is a huge collaborative resource in online education. Transparency is positively affecting value co-creation activities. Institutions must provide data that is regarded confidential because it represents parts of the school's operations in the value co-creation activities of students in the business sector. This information can range from product/service development details to school partnerships, transaction expenses, and security operations (Albisson *et al.*, 2016).

H4. Transparency has a positive effect on the value co-creation activities of economics students.

The COVID-19 Pandemic

According to Woods and Botcherby (2021), Aljehany and Allily (2022), Asiwe *et al.* (2022), the COVID-19 pandemic has caused widespread upheaval in the education industry, and the change to online learning is a challenge for lecturers and students. The author has concluded that this is the key to facilitating cooperation between students and subjects outside the university, creating a space for research exchange, inspiring students to be creative and develop their thinking about all areas of society, thereby blurring the lines between research, learning, and participation in social activities. During the pandemic outbreak, Hassan *et al.* (2020), Cheng *et al.* (2022) and Terkelsen *et al.* (2022) highlighted the value of co-creation projects. The authors performed the research through the NStEP program which was organized by the Irish school system and was open to all students in the country. They found that while COVID-19 has posed serious challenges for teaching and learning, it has also enhanced conversation across the Irish higher education sector, with students serving as co-creators. Therefore, the COVID-19 pandemic positively impacted value co-creation activities.

H5. The COVID-19 pandemic has had a positive impact on students' value of co-creation activities.

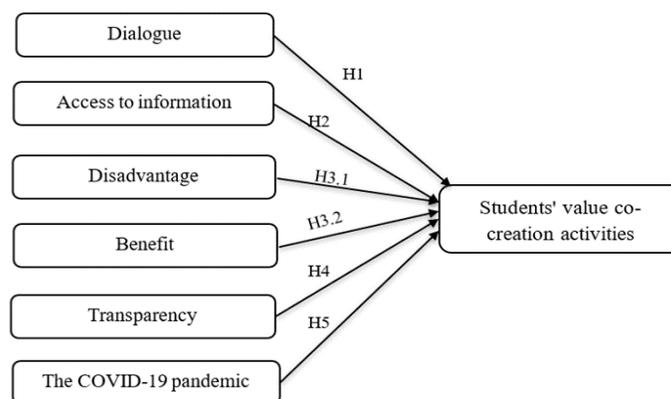


Figure 1. Proposed Research Model

Source: The authors' compilation from the literature review



MATERIALS AND METHODS

Data and Sample

The pilot survey for testing was conducted through a questionnaire for the first 10 participants (including 5 lecturers from National Economics University and 5 students majoring in economics at the top economic training universities in Vietnam). After receiving the feedback, the authors revised the variables and scales.

The data was collected by taking an online survey via Google Forms. The survey participants are students and lecturers from all over Vietnam who teach and study economics. The total valid answer was 423/431 respondents in the period January 5th, 2022 - February 5th, 2022.

Measurements

The variables in this study were adapted from previous studies, with some minor items modified to fit within the context of Vietnam. A seven-point Likert scale was used, ranging from strongly disagree to strongly agree. Ten items to measure dialogue were derived from Prahalad and Ramaswamy (2004); Jensen and Bennett (2016); Messiou (2019); Messiou and Ainscow (2020), and Popp *et al.* (2021). The measurement of the construct of Access to information was developed by Agulu and Aguolu (2002); Prahalad and Ramaswamy (2004); Ferreira and Carayannis (2019). Disadvantage/Benefit scales were derived from Hooks (1994); Prahalad and Ramaswamy (2004); Bovill *et al.* (2016). Six items to measure transparency were derived from Baqer (2006); Albisson, Perera and Sautter (2016). The six-item scale from Hassan *et al.* (2020); Woods and Botcherby (2021) was adapted to measure the Covid-19 pandemic. The authors used a nine item-scale developed by QAA (2012); Nygaard *et al.* (2013); Cook-Sather *et al.* (2014); Woods and Botcherby (2021) to measure value co-creation activities.

Method of Data Analysis

Both measurement and structural models were empirically tested by the Partial Least Squares (PLS) approach. PLS is suitable for our research model because it emphasizes exploration and prediction (Huo *et al.*, 2014; Hair Jr *et al.*, 2016). The procedure for our data analysis consists of (1) Exploratory factor analysis (EFA) was used to explore the measurement of latent constructs; (2) the assessment of the reliability and validity of the measurement model; (3) the evaluation of the structural model.

RESULTS AND DISCUSSION

Descriptive Results

Among 423 students, demonstrated in **Table 1**, females accounted for 75.7%, with 95% being economics students in universities. Others majored in college and intermediate levels. The observed samples are in all three 3 regions in Vietnam.

Table 1. Demographic information statistics of the sample

	Criteria	Number of observations	Percent (%)
Total		423	100
Sex	Male	103	24.3
	Female	320	75.7

Education	Intermediate level	9	2.1
	Colleges	6	1.4
	University	402	95.0
	Graduated	6	1.4

Source: The authors' compilation from data analysis

Measurement Model

Exploratory factor analysis (EFA) was used to explore the measurement of latent constructs. In the analysis, seven distinct factors have emerged from the data. Two factors measure the two dimensions of Dialogue. The remaining five factors measure the construct of Access to information, Benefits, Disadvantage, and Transparency during the COVID-19 pandemic. The value of Kaiser-Meyer-Olkin of 0.926 indicated that the study sample was sufficient. The total variance explained by the six latent constructs is 66.646%. The result of the rotated component matrix based on EFA is presented in **Table 2**.

Table 2. Rotated Component Matrix

	Factor						
	Dialogue (DI)	COVID-19 pandemic (CP)	Access to information (AI)	Disadvantage (DA)	Transparency (TR)	Benefit (BE)	Interaction attitude (IA)
DI4	0.805						
DI3	0.776						
DI5	0.760						
DI1	0.747						
DI7	0.691						
DI2	0.672						
CP3		0.764					
CP4		0.750					
CP2		0.715					
CP5		0.698					
CP1		0.571					
CP6		0.559					
AI4			0.781				
AI5			0.723				
AI6			0.694				
AI7			0.583				
AI3			0.551				
RI3				0.780			
RI5				0.774			
RI4				0.708			
RI1				0.640			
RI2				0.637			
TR2					0.765		
TR3					0.747		



TR4	0.722	
TR1	0.698	
BE2		0.736
BE1		0.734
BE3		0.681
IA1		0.735
IA2		0.578

Source: The authors' compilation from data analysis

From the EFA result, the initially proposed hypotheses will be changed as follows: Hypothesis 1 will be separated into 2 new ones, namely hypothesis 1.1 and hypothesis. 1.2:

- H1.1: Dialogue has a positive (+) effect on the value co-creation activities of students in the economic sector.
- H1.2: Interaction attitude has a positive (+) effect on the value co-creation activities of students in the economic sector.

Validity and Reliability

Validity and reliability are two fundamental elements in the evaluation of a measurement instrument. First, validity is concerned with the extent to which an instrument measures what it is intended to measure. Cronbach's alpha measures the validity (Cronbach, 1951), with Cronbach's alpha values of all variables being more than 0.7 confirming the better reliability of these variables.

Second, Reliability is concerned with the ability of an instrument to measure consistently. The values of composite reliability for all variables are all higher than 0.70, indicating that there is no reliability concern for variables in the model. Finally, the Average Variance Extracted (AVE) values to measure convergence are all above 0.5, indicating no convergence validity problem (Hair *et al.*, 2010). An AVE value above 0.5 indicates good convergence (Table 3). Overall, the internal consistency of all independent variables in the model is acceptable.

Table 3. Variable reliability and convergent validity

Variable	Cronbach's alpha	Composite reliability (CR)	The average variance extracted (AVE)
Dialogue (DI)	0.888	0.915	0.642
Interaction attitude (IA)	0.753	0.890	0.802
Access to information (AI)	0.860	0.900	0.643
Disadvantage (DA)	0.802	0.863	0.558
Benefit (BE)	0.838	0.903	0.756
COVID-19 pandemic (CP)	0.856	0.893	0.584
Transparency (TR)	0.866	0.908	0.713
Students value co-creation activities (VCA)	0.881	0.905	0.514

Source: The authors' compilation from data analysis

Discriminant validity refers to the extent to which constructs are distinct (Fornell & Larcker 1981). Discriminant validity was assessed by examining the Fornell and Larcker (1981), cross-loadings of the indicators (Hair Jr *et al.* 2016), and HTMT (Henseler *et al.*, 2015). As shown in **Table 4**, the square roots of all AVEs (0.526–0.730) were more extensive than the shared variance of a latent variable with other latent variables. Regarding cross-loading, Hair Jr *et al.* (2016) suggested that each indicator's loading should be greater than all its cross-loadings. Each indicator's outer loading was greater than 0.5 (0.502–0.980) on its construct and higher than all its cross-loadings with other constructs in this model. Furthermore, all HTMT values were lower than the threshold value of 0.90, and neither the lower nor upper confidence interval (CI) included a value of 1. Thus, both convergent and discriminant validity was established for this measurement model.

Table 4. Correlation, AVE, and Heterotrait–Monotrait (HTMT) Ratio Values

	AI	BE	CP	DI	VCA	IA	DA	TR
AI	0.802	0.704	0.685	0.608	0.773	0.692	0.527	0.633
BE	0.598	0.569	0.683	0.524	0.724	0.608	0.501	0.606
CP	0.588	0.580	0.764	0.485	0.727	0.538	0.513	0.688
DI	0.534	0.456	0.424	0.801	0.686	0.597	0.279	0.600
VAC	0.673	0.622	0.633	0.609	0.717	0.697	0.521	0.726
IA	0.556	0.482	0.433	0.489	0.567	0.895	0.325	0.517
DA	0.439	0.412	0.426	0.236	0.440	0.255	0.747	0.369
TR	0.546	0.518	0.596	0.528	0.635	0.418	0.310	0.844

Source: The authors' compilation from data analysis

Structural Model

The R^2 values for the co-creation activities of students were 0.661 which was considered acceptable (Cohen *et al.*, 2013). In addition, the authors used the predictive sample reuse technique (Q^2) to evaluate for predictive relevance (Chin, 2010). Based on the blindfolding procedure, Q^2 for the co-creation activities of students was 0.333. This showed that the research model had significant predictive relevance (Hair Jr *et al.*, 2016).

A t-test calculated from the bootstrapping process of 5,000 samples was applied to test the direct effects (**Figure 1**). The variables Dialogue, Access to Information, Transparency, Disadvantages and Benefits, Pandemic COVID-19, and Interactive Attitude have p-value < 0.05. Therefore, these variables are all meant to explain the dependent variable “Value co-creation activities”; hence H1.1, H1.2, H2, H3.1, H3.2, H4, and H5 were supported. The results are presented in **Figure 2**.



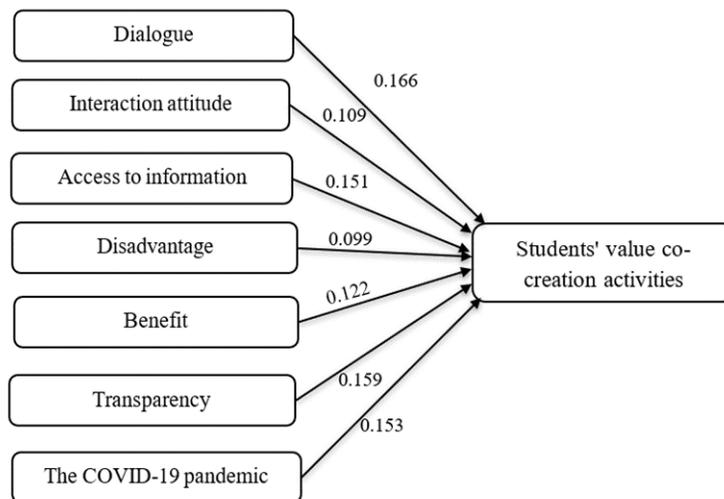


Figure 2. Research Results—the Direct-Effect Relationship Coefficients

Source: The authors' compilation from data analysis

Among factors affecting the value co-creation activities of economics students in Vietnam, the Dialogue has the strongest positive impact, with $\beta = + 0.166$. This finding is aligned with the finding of Voetterl (2002). The mix of form and function in dialogue motivates teachers and learners to participate in collaborative activities. Dialogue provides a foundation for lecturers, students, institutions, and businesses to comprehend and improve existing difficulties in the educational program. Currently, the school/lecturer has taken the time to exchange and absorb the viewpoints of students, but there are still restrictions in the process of conversation between the sides in activities such as publicity, comfort, level of issue solutions following the discussion, and so on. Interaction attitude is a new factor separated from the Dialogue one.

Service recipients have a positive attitude towards problems that exist in the process of using the service or designing and building educational programs ($\beta = 0.109$). As a result, it demonstrates that the relationship between interaction attitude and value co-creation activities is good for both sides. This notion is compatible with the findings of Shamim *et al.* (2017). Customers can only benefit if they have a favorable attitude toward value creation and are comfortable switching from one setting to another. As a result, when students or lecturers acting as service recipients have a better outlook toward participating in value-creating collaborative activity, the campaign's quality is elevated to a greater direction. With $\beta = 0.151$, Access to information is one of the factors that have a positive impact on the value of co-creation activity in university education. This result is consistent with the research results of Prahalad and Ramaswamy (2004); Ferreira and Carayannis (2019). After participation in value co-creation activities, the subjects including the school, lecturers, and school partners need to give timely and useful information, and also listen to the student's responses to inadequacies in the problem. In addition, when students can access useful information sources, they actively participate in the lessons and are willing to suggest and comment on the limitations existing in the curriculum.

The Benefit factor with $\beta = 0.122$ has a greater impact on the activity than the Disadvantage factor ($\beta = 0.099$), and the disadvantage factor has the least impact. The majority of participants

in value co-creation activities are well aware of the benefits obtained as well as the drawbacks encountered when participating in activities. Once deciding to participate in the activity, schools/enterprises, lecturers, and students must consider the benefits they will receive, which can include new teaching methods with two-way exchanges between lecturers and students, or useful knowledge and experiences for students in their future work. These advantages outweigh the disadvantages that the subjects will confront if they choose to participate in these projects. Nygaard *et al.* (2013); Cook-Sather *et al.* (2014) found similar results. Hypothesis H3.1 and H3.2 are accepted. The transparency factor has a great impact on students' value of co-creation activities in university education ($\beta = 0.159$). This finding is consistent with Prahalad and Ramaswamy (2004), which implies that transparency is a motivating factor for ending incorrect information so that participants can freely obtain data. The coefficient of the COVID-19 pandemic factor ($\beta = 0.153$) demonstrates a positive impact on the value of co-creation activities of students and H4 has been accepted as a hypothesis. The results of the analysis show that the COVID-19 pandemic has certain effects on the value of co-creation activities of students and is consistent with the study of Hassan *et al.* (2020). As a result, this is an excellent time for education service providers to arrange and encourage consumers to participate in new value co-creation activities, boosting the quality of their activities and ensuring their sustainability and interactivity among subjects in activities.

Research results have similarities with previously published topics such as Shamim *et al.* (1990); Prahalad and Ramaswamy (2004); Biao Liu and Dong Li (2012); Ghazali, Albinsson, *et al.* (2017) and Hassan *et al.* (2020) show that the function of factors in the value co-creation of educational services is critical from the first people begin to share information. The cause of this similarity comes from: (i) Most service recipients want to access information quickly and accurately; all want to be aware of the benefits and limitations existing in the products/services they are using; (ii) The majority of students expect that the educational service in VietNam will also have innovations and improvements like today's advanced education systems in the US, Japan, Finland so that when they stay in their own country, they will also receive the core values and good of knowledge without having to study abroad.

One additional finding of this paper is: the economics education area is a perfect framework for value co-creation activities to grow, as it relates directly to high-quality human resources.

Education systems have inherited and promoted achievements from published studies on value co-creation activities in education, thereby making appropriate policies and regulations to bring about practical values through the program. However, according to our study, 41.13% of those who receive educational services have never heard of this activity in their university education system. The Vietnamese education system has gained some specific results in reforms and encourages innovation, but still underdeveloped. Key weaknesses include popular one-way training methods, traditional organization, and operation, weak cooperation between educators and practitioners, and simple and underdeveloped facilities.

Recommendations

To improve the co-creation mood and activities of students at economics universities in Vietnam, the following recommendations are proposed to related stakeholders.

For students: each student needs to (i) develop self-study, self-research, and dynamic skills to maximize self-discipline in research and study; (ii) actively exchange, learn from each other and



expand social relationships with other students; (iii) regularly participate in expressing your opinions in lectures; (iv) zealously give feedback on unsatisfactory points and limitations to the school/lecturer.

For academies/lecturers: (i) truly consider students as partners when participating in value co-creation activities; (ii) recognize and improve the existing shortcomings before and during the participation in strategies; (iii) there is always a change in the teaching method to better suit the audience and the actual situation; (iv) create a database, other facilities for learners to update official and complete information from the school about learning content, training programs, scholarships,...; (v) encourage and periodically organize dialogues and surveys with students about the curriculum, teaching methods, and ways of organizing activities in the school so that students can give their opinions; (vi) more diverse channels of dialogue, the form of dialogues to suit different dialogue problems or students; (vii) digitize learning materials, lectures, etc. so that students can access knowledge more easily; (viii) create conditions for students to practice, exposure to real jobs related to future careers. In particular, Vietnamese universities must constantly change as organizational innovation has a positive impact on the performance of Vietnamese academic facilities. The more they use it, the more experienced they grow, which allows them to accomplish better results.

For enterprises: (i) promote and focus on cooperation and investment with schools; (ii) expand more practical activities, and tours, and provide training/internship opportunities for students; (iii) provide and create maximum conditions for colleges/students to access information.

CONCLUSION

Vietnam's education system has gained some achievements but is still faced with several challenges. To solve these problems, the value co-creation activity is one of the best approaches. This paper is aimed to analyze the determinants of the value co-creation activities of economic students in Vietnam in the context of the COVID-19 pandemic. The key impact factors, sorted from strongest to weakest are:

First, clear and open dialogue between students and lecturers, among students, and between students and university administrators. Second, transparency of information provided by universities and the policies to encourage co-creation activities for students. Third, the COVID-19 pandemic pushes both universities and students to be more innovative to overcome difficulties, especially for a long time for online education and research. Forth, access to information of students all types of necessary resources, such as books, articles, datasets, and reports, especially in economic fields. Fifth, the benefits of both students and lecturers in co-creation activities of the institutions. Lectures guide and inspire students to explore their potential and creativity, and students with their innovation support lecturers and the universities to develop. Sixth, interactive attitude, which is part of the "Dialogue" factor, was separated, as it became one important component for promoting co-creation activities of students. Students with open and critical mindsets help promote co-creation activities. Seventh, the disadvantage hurts co-creation activities, as it took time and effort for universities to respond to all requests and comments of students, while they do not want to wait, and the worth-of-web approach made students less patient.

Therefore, to improve the co-creation activities of economic students at universities in Vietnam, all related stakeholders (students, universities, enterprises) should improve their related activities and strategy.

Limitations

In this paper, we just focus on universities, not yet on colleges and other institutions. The survey respondents are mainly from the North of Vietnam. Secondary data are not available for analysis. Our analysis and recommendations are not on legal aspects. These limitations are for further studies.

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