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The Impact of COVID-19 on Value Co-Creation Activities: A Study of Economics Students in Vietnam

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Abstract

This study investigates the factors influencing value co-creation activities among economics students in Vietnam during the COVID-19 pandemic. Data was collected from 423 students and teachers and analyzed using linear regression models. The study shows that the main factors influencing value co-creation activities, listed in order of impact, are: (i) dialogue, (ii) transparency, (iii) the COVID-19 pandemic, (iv) access to information, (v) benefits, (vi) interactive attitude, and (vii) disadvantage. Notably, the study introduces the "interactive attitude" factor, a sub-category derived from dialogue, which highlights the importance of two-way communication and positive stakeholder engagement in fostering co-creation activities. These findings are novel compared to prior research. The study concludes with recommendations for students, educators, institutions, and partners to increase their roles in promoting responsible and effective co-creation, contributing to the development of Vietnam's higher education system.

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

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Introduction

Vietnam has made significant strides in innovating and developing its university education system; however, several challenges persist in terms of educational quality. Many programs remain focused on specialized knowledge, often lacking practical application. Furthermore, the innovative approach to learning and teaching is hindered by inadequate facilities that do not fully support the needs of both learning and research. Students also face limitations in terms of self-study capabilities and critical thinking skills.

To address these challenges, value co-creation activities have emerged as an effective solution. These activities involve students in the educational process, encouraging them to engage in the design and provision of educational services, as well as in the development of products that meet both learning and societal needs. This approach has become particularly relevant during the COVID-19 pandemic, which necessitated a shift to online learning. Traditional pedagogical methods, when applied in an online context, have proven to be less effective and may even be considered outdated for fostering successful learning outcomes. Additionally, during the pandemic, instructors had to balance their responsibilities at home and work, all while

continuing to teach remotely, which further compounded the challenges [1]. This shift has significantly encouraged proactive behavior among both students and teachers [2], but it also introduced obstacles related to tools, attitudes, skills, and teaching methods that needed to be adapted for effective online learning.

Despite the growing importance of value co-creation in university education, research on the factors influencing students' participation in such activities remains limited. Previous studies have primarily focused on evaluating the values and benefits of various educational campaigns [3]. Current research tends to focus on fields that require specialized knowledge, particularly in areas related to the human body, resulting in a low participation rate in these activities [4]. Building on previous work, this study aims to explore the factors that influence students' involvement in value co-creation activities within the context of Vietnam's economics students during the COVID-19 pandemic. This research addresses a gap in the existing literature and provides empirical evidence to better understand the dynamics of value co-creation in higher education during such a challenging period.

Literature review

Value co-creation activities of students

Value co-creation refers to the collaboration between businesses and customers, where customers actively contribute to the creation of products and services that cater to market needs [5, 6]. This process involves collaboration across various stakeholders, ensuring that all parties involved contribute to generating value [7, 8].

In the context of education, value co-creation involves a partnership between students and educational institutions (or businesses) working together to refine educational products and services. This process greatly impacts both the students and institutions. First, it encourages positive changes in the institutional structure and teaching methods, creating a more innovative and progressive educational experience for students [9]. Second, fostering collaboration between students and professors, enhances the decision-making process, leading to an enriched learning experience [10]. Third, it promotes institutional innovation, which can significantly improve performance outcomes [6, 8, 11].

Factors influencing value co-creation activities in university education

Dialogue

Dialogue refers to the interactive communication between participants, aimed at solving issues collaboratively. Prahalad and Ramaswamy [5] and Hsieh and Hsieh [12] emphasize that dialogue represents an organization's capacity to understand and fulfill customer needs. Ballantyne and Varey [13] suggest that dialogue not only facilitates value co-creation but also stimulates innovation and learning by fostering mutual understanding among stakeholders. Research by Fladkjær and Otrel-Cass [14] highlights how dialogue serves as a foundation for professors and students to identify and resolve curriculum-related issues. Through dialogue, feedback on products and services can be shared, improving the relationship between students and the institution. Previous studies, including those by Meng and Sun [15] and Könings *et al*. [16], affirm the positive impact of dialogue on co-creation activities, leading to the following hypothesis:

H1. Dialogue positively influences the value co-creation activities of economics students.

Access to information

Kelley *et al*. [17] define accessibility as the ease with which customers can obtain the necessary information to make informed decisions and take action. Agulu and Aguolu [18] point out that the lack of accessible information leads to instability within universities. Albinsson *et al*. [19] further explain that accessibility refers to the extent to which organizations allow access to relevant information. Prahalad and Ramaswamy [5], Ferreira and Carayannis [20], and Cedstrand *et al.* [21] argue that informed, empowered consumers are key partners in value co-creation. Nguyen and Do [22] confirm that effective access to information is crucial for knowledge sharing within universities. This highlights the importance of information access in improving the quality of students' participation in co-creation activities, leading to the hypothesis:

H2. Access to information positively influences the value co-creation activities of economics students.

Disadvantages and benefits

Cook-Sather *et al.* [23] describe several benefits of value co-creation for both teachers and students, including increased participation, motivation, and learning, as well as enhanced student-lecturer relationships and the development of various graduate attributes. However, there are challenges when educational institutions engage students in decision-making. These challenges can affect the institutional power structure and processes. Students are expected to collaborate in improving teaching, learning, and decision-making across all university levels [24]. Research indicates that students are often an

underused resource in higher education [25, 26], and both faculty and students benefit from collaborative teaching approaches [27].

Bovill *et al.* [28] and Lubicz-Nawrocka [29] highlight the challenges educational institutions face when both professors and students aim to co-create knowledge. The impact of both the advantages and disadvantages of co-creation activities is significant in shaping educational outcomes. Thus, the following hypotheses are proposed:

H3.1. Disadvantages positively influence students' value in co-creation activities.

H3.2. Benefits positively influence students' value in co-creation activities.

Transparency

Transparency refers to the willingness of an organization to disclose information about its operations, including technologies, products, processes, transaction costs, systems, and concerns regarding profitability and security [30]. In the context of education, transparency manifests when students and instructors have a mutual understanding of actions and the necessary resources [31]. In online education, transparent information serves as a crucial resource for collaboration. For value co-creation activities, this transparency is especially important. Institutions are encouraged to share details about their internal processes, such as product or service development, partnerships, costs, and security operations, which may usually be confidential in business [19].

H4. Transparency positively influences the value co-creation activities of economics students.

The impact of the COVID-19 pandemic

The COVID-19 pandemic disrupted the education sector by forcing a rapid shift to online learning, posing significant challenges for both students and instructors [32-35]. However, this shift also opened new opportunities for collaboration between students and external stakeholders, creating spaces for research exchange and fostering creative thinking about societal issues. This blurring of boundaries between learning, research, and participation in social activities was highlighted during the pandemic's peak. Studies by Hassan *et al*. [36], Cheng *et al.* [37], and Terkelsen *et al*. [38] emphasized the importance of co-creation projects, particularly the NStEP initiative in Ireland, which encouraged nationwide student involvement. While the pandemic created numerous teaching challenges, it also stimulated valuable conversations within the Irish high education community, with students actively engaged as co-creators. Thus, the pandemic positively contributed to value co-creation activities.

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

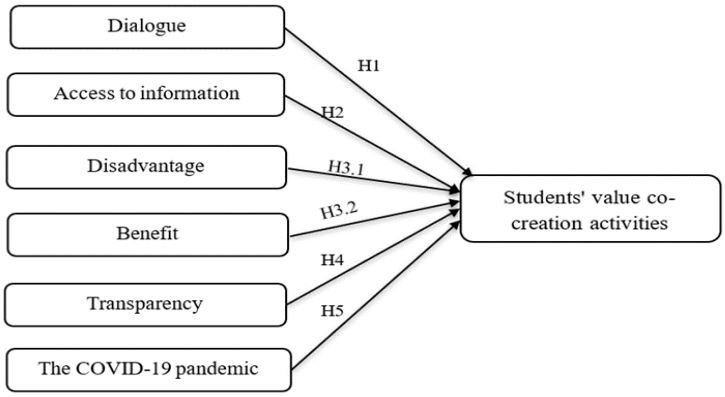

Figure 1. Proposed research model (Source: The authors' compilation from the literature review)

Materials and Methods

Data collection and participants

The research began with a pilot survey involving 10 participants: five lecturers from the National Economics University and five students from top economics programs in Vietnam. Their feedback helped refine the variables and scales used in the study.

The main data collection was carried out through an online survey on Google Forms, targeting economics students and faculty across Vietnam. The survey took place between January 5th and February 5th, 2022, with 423 out of 431 responses being valid.

Survey instrument

The variables for this study were measured using scales adapted from prior research, with slight modifications to suit the Vietnamese context. A seven-point Likert scale was used, ranging from "strongly disagree" to "strongly agree." The "dialogue" variable was assessed with 10 items adapted from sources such as Prahalad and Ramaswamy [5], Messiou [39], Messiou and Ainscow [40], and Popp *et al.* [8]. For "Access to Information," the items were derived from Agulu and Aguolu [18], Prahalad and Ramaswamy [5], and Ferreira and Carayannis [20]. The scales measuring "Disadvantages and Benefits" were based on the works of Hooks (1994), Prahalad and Ramaswamy [5], and Bovill *et al*. [28]. Transparency was assessed using six items from Baqer [30] and Albinsson *et al*. [19] The impact of the COVID-19 pandemic on co-creation activities was measured using six items from Hassan *et al.* [36] and Woods and Botcherby [32]. A nine-item scale, adapted from QAA [24], Nygaard *et al*. [27], Cook-Sather *et al.* [23], and Woods and Botcherby [32], was used to measure value co-creation activities.

Analytical approach

Partial least squares (PLS) were used to analyze the data, as it is particularly suitable for exploring and predicting relationships [41, 42]. The analysis was performed in three stages: (1) exploratory factor analysis (EFA) to identify and validate the latent constructs, (2) evaluation of the reliability and validity of the measurement model, and (3) assessment of the structural model.

Results and Discussion

Descriptive results

Table 1 outlines the demographics of the 423 students surveyed. Of the participants, 75.7% were female, and 95% were economics students from universities. The remaining students were enrolled in intermediate and college-level programs. The sample was well-represented across all three regions of Vietnam.

Table 1. Sample demographic breakdown (Source: data analysis by the authors)

Criteria	Number of participants	Percentage (%)
Total	423	100
Gender		
Male	103	24.3
Female	320	75.7
Education level		
Intermediate level	9	2.1
Colleges	6	1.4
University	402	95.0
Graduated	6	1.4

Measurement Model

An exploratory factor analysis (EFA) was conducted to assess the measurement of latent variables. The analysis revealed seven distinct factors. Two of these were associated with the dimensions of Dialogue, while the other five related to the constructs of Access to Information, Benefits, Disadvantages, and Transparency during the COVID-19 pandemic. The Kaiser-Meyer-Olkin value of 0.926 suggested that the sample size was adequate for this type of analysis. The six latent constructs accounted for 66.646% of the total variance. The rotated component matrix results from the EFA are shown 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

Revised hypotheses

Following the exploratory factor analysis (EFA) results, the original hypothesis related to dialogue has been divided into two separate hypotheses:

H1.1: Dialogue positively influences the value co-creation activities of economics students.

H1.2: The attitude towards interaction positively influences the value co-creation activities of economics students.

Validity and reliability

Validity and reliability are essential when assessing the effectiveness of a measurement tool.

Validity refers to whether the tool measures what it is intended to measure. Cronbach's alpha was used to check validity, with values above 0.7 for all variables, indicating good validity and reliability of the measures [43].

Reliability refers to the consistency of the measurements. The composite reliability values for all variables were above 0.70, meaning no reliability concerns were identified.

The average variance extracted (AVE) values, which measure convergence, were all above 0.5, confirming that convergence validity is not an issue. This ensures good convergence [44]. The internal consistency of all variables in the model is deemed satisfactory, as shown in **Table 3**.

Table 3. Reliability and convergent validity of variables

Variable	Cronbach's alpha	Composite reliability (CR)	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

Discriminant validity and structural model analysis

Discriminant validity

Discriminant validity assesses how well different constructs within the model are distinct from each other [45]. In this study, we measured discriminant validity using the Fornell-Larcker criterion, cross-loadings, and HTMT [46]. The results presented in **Table 4** show that the square roots of the AVE values for each construct (ranging from 0.526 to 0.730) were greater than their respective correlations with other constructs, ensuring discriminant validity. Moreover, the cross-loadings showed that each indicator's loading was consistently higher on its designated construct than on others, with values ranging from 0.502 to 0.980. Additionally, the HTMT ratios were all below the critical threshold of 0.90, with the confidence intervals not including 1, confirming that there were no issues with discriminant validity. As such, both convergent and discriminant validity have been adequately established for the model.

Table 4. Correlations, AVE, and HTMT ratio results (Source: Compiled from authors' data analysis)

Variable	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
VCA	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

Structural model evaluation

The R^2 value for students' value co-creation activities was calculated at 0.661, which reflects an acceptable level of variance explained [47]. In addition, we assessed predictive relevance using the Q^2 value obtained through a blindfolding procedure [48]. The resulting Q^2 of 0.333 for the co-creation activities of students indicates that the model holds significant predictive power [42, 49].

To test the direct relationships between variables, bootstrapping with 5,000 samples was conducted, as shown in **Figure 1**. The analysis revealed that the variables including dialogue, access to information, transparency, disadvantages and benefits, COVID-19 pandemic, and interaction attitude all had P-values less than 0.05, suggesting their significant contribution to explaining students' value co-creation activities. As a result, hypotheses H1.1, H1.2, H2, H3.1, H3.2, H4, and H5 were supported, and the findings are presented in **Figure 2**.

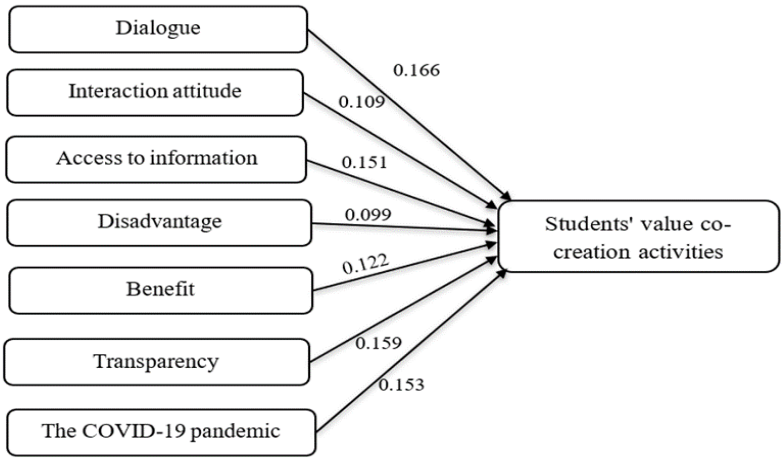

Figure 2. Research results—the direct-effect relationship coefficients (Source: The authors' compilation from data analysis)

Among the factors influencing value co-creation activities of economics students in Vietnam, Dialogue stands out with the highest positive impact (β = +0.166). This aligns with Voetterl's [50] findings, emphasizing that a combination of function and form in dialogue fosters collaboration between teachers and students. Dialogue lays the groundwork for enhancing the understanding of challenges within educational programs. While schools and lecturers are making efforts to engage and consider students' viewpoints, limitations still exist in aspects like communication quality, issue resolution, and the depth of conversations.

The factor Interaction Attitude, now separated from Dialogue, has also shown a positive impact (β = 0.109). This suggests that a positive attitude toward addressing challenges in service delivery or educational program design fosters a stronger relationship between participants, benefiting both sides. This aligns with Shamim *et al*. [51], where customers (or students, in this case) can only truly benefit from value co-creation if they have a positive outlook and are adaptable to different settings.

In terms of Access to Information, it significantly influences value co-creation activities (β = 0.151), which is in line with the results of Prahalad and Ramaswamy [5] and Ferreira and Carayannis [20]. After engaging in value co-creation activities, schools, lecturers, and partners must ensure that students receive timely, relevant information and that their feedback is considered. Access to useful information encourages active student participation and their willingness to identify limitations within the curriculum.

Benefits (β = 0.122) have a greater impact than Disadvantages (β = 0.099) in value co-creation activities. Most participants are aware of the benefits and challenges they face in such activities. When deciding to engage, schools, companies, lecturers, and students weigh the benefits—such as new teaching methods and useful experiences for students' future careers—against the disadvantages, which often seem less significant. This finding aligns with Nygaard *et al.* [27] and Cook-Sather *et al*. [23]. Therefore, hypotheses H3.1 and H3.2 were confirmed.

The Transparency factor (β = 0.159) also plays a significant role, reflecting the idea that transparency motivates participants to exchange accurate information, in line with Prahalad and Ramaswamy [5]. Similarly, the COVID-19 Pandemic (β = 0.153) has a positive impact on the value of co-creation activities, confirming H4. The pandemic has contributed to the evolution of co-creation activities, aligning with Hassan *et al.* [36], and highlighting an opportunity for educational service providers to facilitate new forms of value co-creation, enhancing sustainability and interaction among participants.

The findings in this study are consistent with earlier research by Shamim *et al*. [51], Prahalad and Ramaswamy [5], Liu and Li [52], Ghazali *et al.* (2017), and Hassan *et al.* [36]. These studies demonstrate that the role of factors in educational value co-creation is crucial from the moment participants begin sharing information. The similarity arises from two main points: (i) most service recipients prefer quick, accurate information and expect to understand the benefits and limitations of the services they use, and (ii) many students hope for educational innovations similar to those in advanced systems such as those in the US, Japan, and Finland, allowing them to gain core knowledge locally without the need to study abroad.

An additional insight from this study is that economics education is an ideal environment for value co-creation, given its direct connection to high-quality human resource development. While the Vietnamese education system has made progress with reforms, there are still significant challenges. For instance, 41.13% of educational service recipients reported being unfamiliar with value co-creation activities within their university system. Despite some success, the system remains underdeveloped, with issues such as outdated one-way teaching methods, traditional organizational structures, weak collaboration between educators and industry practitioners, and inadequate facilities.

Recommendations

To enhance the value co-creation atmosphere and activities of students in economics universities the following recommendations are provided for key stakeholders:

For Students:

Develop self-study and research skills: Students should focus on improving discipline in study and research.

Engage in peer learning: Actively interact with fellow students to expand their social networks and exchange knowledge.

Participate in class discussions: Regularly contribute opinions during lectures to foster engagement.

Provide constructive feedback: Students should openly share their thoughts on areas for improvement in the curriculum or teaching methods.

For Academics/Lecturers:

Treat students as partners: Recognize students as active participants in the co-creation of value within the academic environment.

Address existing gaps: Identify and resolve any shortcomings in teaching methods and strategies before and during their implementation.

Adapt teaching methods: Continuously refine teaching approaches to align with the needs of students and the evolving educational landscape.

Provide accessible resources: Establish a well-organized database where students can easily access up-to-date information on courses, training programs, scholarships, etc.

Facilitate regular dialogues: Encourage ongoing conversations and surveys with students to gather feedback on the curriculum, teaching methods, and school activities.
Diversify communication channels: Tailor dialogue forms and methods to suit different topics and student needs.
Digitize educational content: Make learning materials and lectures available online to enhance accessibility for students.
Offer real-world experiences: Provide opportunities for students to gain practical experience related to their future careers.
For Enterprises:
Strengthen collaboration with educational institutions: Increase cooperation and investment in partnerships with schools to promote mutual growth.
Expand practical opportunities: Organize more practical activities, tours, and internships for students to gain hands-on experience.
Support information access: Create better opportunities for students and educational institutions to access valuable information relevant to their academic and professional growth.

Conclusion

Although Vietnam's education system has made significant progress, it continues to face numerous challenges. One effective approach to address these issues is the concept of value co-creation. This paper examines the key factors influencing the value co-creation activities of economics students in Vietnam during the COVID-19 pandemic. The main factors, listed in order of their impact, are:
Open and transparent dialogue: Effective communication between lecturers and students, among students, and between students and university administrators is essential.
Information transparency: Clear and accessible information from universities, as well as policies that encourage student participation in co-creation activities, play a crucial role.
Impact of COVID-19: The pandemic has pushed both universities and students to be more innovative, particularly in adapting to online education and research challenges.
Access to information: Students' access to necessary resources, including books, articles, datasets, and reports, particularly in the field of economics, is crucial for fostering value co-creation.
Benefits of co-creation: Both students and lecturers benefit from participating in co-creation activities. Lecturers inspire students to explore their creativity, while students help lecturers and universities grow through their innovative contributions.
Interactive attitude: A positive and critical attitude from students—an aspect derived from the “Dialogue” factor—is vital for encouraging active participation in co-creation activities.
Disadvantages: While co-creation activities offer benefits, challenges like time constraints and student impatience due to delays in responses can hinder their success.
To enhance the co-creation activities of economics students at Vietnamese universities, all stakeholders (students, universities, and enterprises) need to align their strategies and improve their respective contributions.

Limitations

This study focuses solely on universities, excluding colleges and other educational institutions. Additionally, survey responses are mainly from the northern region of Vietnam, limiting the geographical diversity. The analysis is also based solely on primary data, as secondary data was unavailable. Legal aspects have not been considered in the study and are areas for future research.

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Ethics statement: None

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