Analysis of Factors Affecting User Inclination to use Virtual Education Exhibitions in the Post Pandemic Covid-19 Era: Case Study in Indonesia

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Abstract: Social distancing policies during the COVID-19 period have opened a space for interventions in the use of digital technology that was previously rejected by the public. Currently, most of the community activities have been carried out online, including those related to education, such as hosting virtual exhibitions with an educational purpose. Virtual exhibitions (VE) are online exhibitions that display information on specific topics. However, to the best of our knowledge, research on VE in the educational context is still lacking. This study aims to identify the variables that affect users' intentions to attend the virtual exhibition frequently. The channel expansion theory, flow theory, technology acceptance model, and expectation confirmation theory serve as the foundation for the research model that is constructed. The model was tested using data from 321 respondents who had visited VE, then analyzed using Structural Equation Modeling (SEM) with the aid of the SmartPLS application version 3.3.3. The findings show that 11 factors significantly influence the intention to continue using VE, while the other 2 factors have no significant influence. Thus, perceived usefulness has a significant effect on satisfaction and continued use intention to use VE, but not on perceived enjoyment. Furthermore, the perceived ease of use of VE has a significant impact on perceived usefulness and perceived enjoyment. However, media richness does not significantly affect perceived enjoyment. It's just that media richness influences perceived ease of use significantly. Confirmation also has a significant impact on perceived enjoyment, perceived usefulness, and satisfaction. Perceived enjoyment has a significant effect on satisfaction and continued use intention, and satisfaction has a significant effect on continued use intention to use VE. The findings are useful for VE providers and developers in developing a transformation strategy to increase the intention to use VE in every educational exhibition.

Keywords: Virtual exhibition, Continuance intention, Channel expansion theory, Flow theory, Expectation confirmation theory, Technology Acceptance Model

1. Introduction

During the Covid-19 period, the Indonesian government's social distancing policy (based on WHO guidelines) opened up new intervention spaces in the midst of society regarding the use of digital technology, which was previously rejected by many people. Covid-19 has been classified as a global pandemic by the World Health Organization since March 11, 2020 (Cucinotta and Vanelli, 2020). The covid-19 virus is classified as a global pandemic because outbreaks of disease caused by viruses have spread to multiple continents and countries, affecting a large number of people (Maital and Barzani, 2020; Deepa et al., 2022). The pandemic, which is still affecting people, has had a far-reaching impact on all sectors' lives, including the education sector.

Prior to the Covid-19 pandemic, digital technology use in Indonesia was limited and met with a lot of resistance (Toto and Limone, 2021). Digital technology is mostly used for academic administration, such as managing lecture implementation data through an academic information system. However, following the Covid-19 pandemic, digital technology has become increasingly popular, including for the implementation of e-learning with the help of various learning support technologies such as Learning Management Systems (LMS),

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collaborative tools, video conferencing, and so on. This technology has become an essential part of all students' daily activities. The Covid-19 pandemic has transformed all educational activities into digital-technology-based activities. Prior to Covid-19, learning activities in class were typically conducted face-to-face (offline) learning in class. However, due to distance restrictions imposed by the Indonesian government, all of these activities had to be carried out online when the Covid pandemic occurred. Teachers and lecturers were forced to change the way students learn. For example, by recording asynchronous learning material that students can access whenever they want, or synchronously, for example, by using video conferencing to simulate learning in a traditional classroom setting. Since physical exhibitions are no longer as effective in promoting education as they once were, online exhibitions, also known as virtual exhibitions, have been created as a technological breakthrough.

Online exhibition (virtual exhibition) is an exhibition that is carried out online to show information with certain themes, for example, the theme of education education (Nentwig, 1999; Kamariotou, Kamariotou and Kitsios, 2021; Zhuang, 2021; Monaco et al., 2022). Virtual exhibition (VE) differs from physical exhibition in that it allows users to view information virtually and collections in digital form such as educational materials, photo/video galleries, digital artifacts, interactive maps, or educational games (Kamariotou, Kamariotou and Kitsios, 2021). The website virtualexpoid.com is one of the VE sites we use as an example. Figure 1 depicts one of the features of the virtual expo (VE), namely the forum, where prospective students can interact with other prospective students or with the campus to discuss all matters related to campus activities (curriculum, costs, etc.). The lobby element in Figure 2 contains a list of event details, therefore that is an example of a form of virtual information. Figure 1 and Figure 2 can prove that VE is not a site that provides physical exhibition, but virtual. VE can be relied on as a medium for conveying significant information, overcoming the limitations of distance and time that physical exhibitions have (Kim and Hong, 2020). However, VE also has several drawbacks, such as the inability to hold in-person meetings and the need for an internet connection in order to use it.

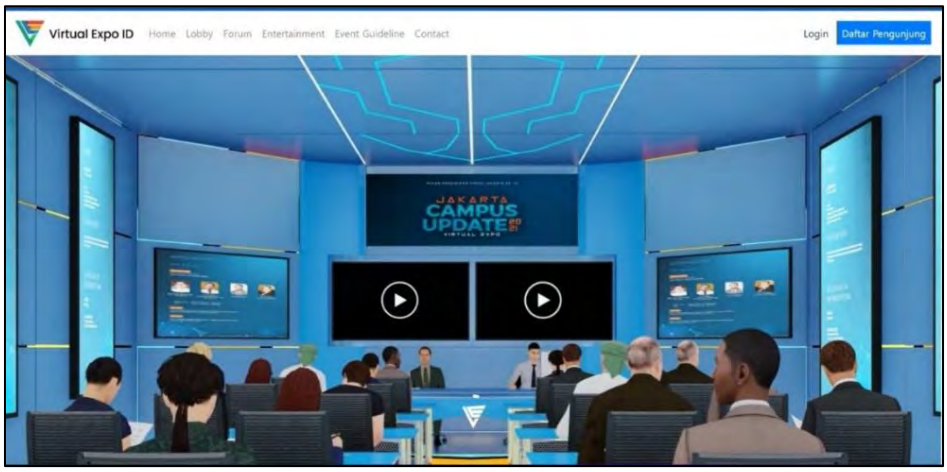

Figure 1: Forum Feature Display

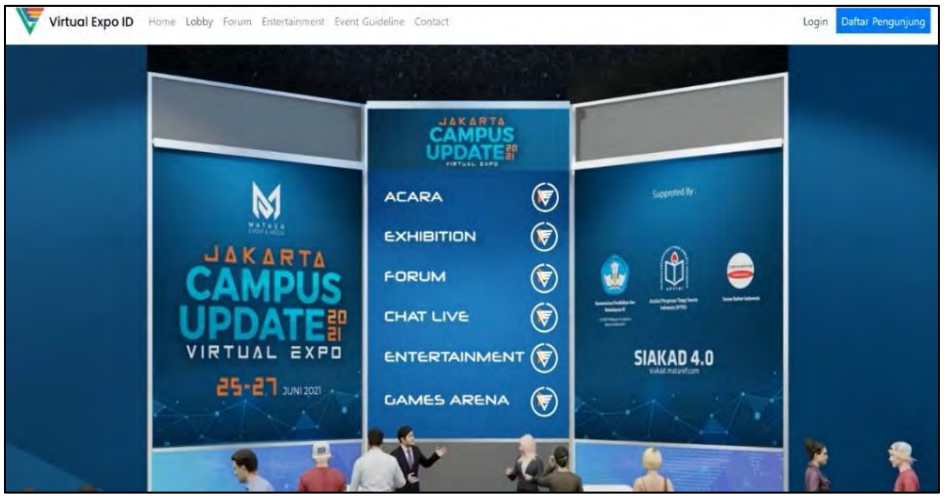

Figure 2: Lobby Feature Display

VE can provide great benefits in the education sector, especially for students. The continuity of the use of VE after the COVID-19 pandemic is crucial for this investigation, however, research in the context of VE in the education sector to the best of our knowledge is still uncommon (particularly in Indonesia). Therefore, an in-depth investigation is required to determine what is the most compelling reason for someone to continue using VE. VE. As far as we know, there has been no research in the context of the Covid-19 pandemic that focuses on discussing the continuance intention factor for the use of VE in the education sector, and we have not found similar research in Indonesia. This gap is the driving force behind the need for VE research. It is because of this gap that VE-related research is required.

Studies on the purpose of technology sustainability in the field of Education (specifically VE) have received little attention thus far. The majority of research in the tourism sector focuses solely on virtual tours, such as work by (El-Said and Aziz, 2022; Kim and Hong, 2020; Kamariotou, Kamariotou and Kitsios, 2021). Previous studies have also focused on other sectors, such as Hooi and Cho (2017)'s intention to continue using virtual worlds, or Oghuma et al. (2016)'s use of mobile instant messaging, and many other studies outside the education sector, including (Oghuma et al., 2016; Hooi and Cho, 2017; Zhang et al., 2017; Mouakket, 2018; Wang et al., 2019; Ashfaq et al., 2020; Shao et al., 2020; Lim et al., 2021; Yan et al., 2021). Thus, to the best of our knowledge, no one has discussed the intention of continuing VE in the education sector indefinitely after the Covid-19 pandemic. Therefore, the purpose of this study will be to discuss the intent to continue using virtual education exhibitions.

The purpose of this study is to determine the relationship between factors that can influence the continuance use intention of VE after the Covid-19 pandemic. There are four theories that we use to analyze the relationship between factors that can influence the intention to continue using VE on an ongoing basis in order to determine the research objectives. The first is Channel Expansion Theory (CET), which we adopted because it allows communication between cast booth keepers and visitors (students) in VE. The decision to employ CET was made because it can combine user (learner) experience with media perception richness when using VE channels. The availability of richness in the context of VE affects how well a user can interact with the media when visiting VE. Websites should attempt to deliver information through rich media formats since more detailed information will foster higher trust.

The second theory is Flow Theory. The flow theory was chosen because it is anticipated that customers who use VE will last a long time, so exploration with schools is required for VE's sustainability. In addition, this theory will be used to measure the perceived enjoyment that users feel when using VE and to identify the user experience with VE technology (Carlson and Zmud, 1999; D'Urso and Rains, 2008). User experience means whether the user feel satisfied using VE or feel enjoyed when using VE. The third theory is the expectation confirmation theory (ECT), which we choose since it would be used to assess the satisfaction factor of users (satisfaction) against VE, the factor of perceived usefulness, and confirmation factors to consumer behavior post-use of VE. The fourth theory, the Technology Acceptance Model (TAM), was chosen as in the context of VE the perceived ease of use factor is a factor needed by students to use a system technology. VE is considered difficult to master by students who are new to using it, so it requires perceived ease of use factor to analyze the ease of acceptance of an adoption technology.

The structure of this paper is written as follows: Part 2 exposes the literature on VE and the theories used for this study. In Part 3 we present research models and hypotheses development. We describe Part 4's research approach, which includes data collecting and measurement items. Meanwhile, in Part 5 we present the results of the research. Discussions and implications are outlined in Section 6. For conclusions and limitations, we present in Section 7.

2. Literature Review

2.1 Virtual Exhibition

According to Kamariotou, Kamariotou and Kitsios (2021), the existence of virtual exhibitions can aid in boosting the number of traditional museum visitors by providing a wide collection of artifacts that can keep up with contemporary trends. Virtual exhibitions can overcome difficulties about the limitations of space, time, and location (place). There is also a virtual exhibition that can be accessed anytime and anywhere without additional cost. Virtual exhibitions are in the nature of being a means of spreading culture for users who cannot visit the museum in person (people with impairments will find this to be particularly beneficial, or those with financial constraints, or other hurdles, like the pandemic.). Virtual exhibitions can provide additional information

compared to physical exhibitions, for example, providing information about artifacts in the form of ownership history, follow-up episodes, or information about the title of (Kamariotou, Kamariotou and Kitsios, 2021).

2.2 Channel Expansion Theory

Channel Expansion Theory (CET) is a theory about the relevance of a person's experience to the use of a medium, this theory was proposed by Carlson and Zmud in 1999. CET investigates a person's experience to develop rich perceptions within a particular channel (Carlson and Zmud, 1999). Experience is crucial for CET since it may occasionally enhance media richness to a communication channel efficiently and effectively. The main variables in CET are media richness perception, channel user experience, and social influence felt from a channel (Carlson and Zmud, 1999; Anders, Coleman and Castleberry, 2020). CET states that the level of experience using media channels and the perceived social influence can expand users' perception of media richness. Therefore, the perception of a person's media richness is based on experiences about topics, media, and communication partners (Carlson and Zmud, 1999). User perception is considered important because it relates to the experience with the partner, the media, and the topic chosen so it will be very important in understanding the choices individuals make when choosing a channel (D'Urso and Rains, 2008). In this study, the perception of media richness of each individual is based on the topic, media, and content provided by the VE visited. The user experience in communicating with the booth keepers through the channels of communication channels provided will allow these individuals or users to better understand what the booth provides.

2.3 Flow Theory

Flow Theory, according to Mirvis (1991) is measuring the perceived enjoyment that users feel when visiting a virtual exhibition to form an experience that makes users focus on the activities they are doing, namely visiting the virtual exhibition, so that they lose their self-awareness (Muñoz-Carril et al., 2022). Flow experience refers to the user's awareness when truly enjoying the meaning of involvement in an activity (Cheng, 2021; Mirvis, 1991). It creates intrinsic motivation in the user when the activity takes place and not only when the activity is completed. In other words, users feel pleasure or comfort when visiting a virtual exhibition so that they feel an experience such as losing self-awareness, such as forgetting time, or not being aware of the surrounding situation because they are too focused on visiting the virtual exhibition.

2.4 Technology Acceptance Model

Based on the Technology Acceptance Model (TAM) by Davis (1989), states that perceived ease of use is the most important factor in the acceptance of technology. Perceived ease of use within TAM is believed to predict the perceived benefits of using the technology. Perceived ease of use is defined as the degree to which a technological system is simple to comprehend and employ (Natasia, Wiranti and Parastika, 2021). TAM is a theory that explains how users react to new technologies and how they might be employed. In TAM, the perceived ease of use factor is a factor that can influence the attitude toward use, and the intention of behavior to use new technology (Aeni Hidayah et al., 2020). The perceived ease of use factor means that a person feels easy and has no difficulty using a certain technology (Mohamad, Amron and Md Noh, 2021; Khanh, Do and Ngoc, 2022). This element also indicates that using a system's technology is simple, does not make things tough for users, and does not become a burden (Scherer, Siddiq and Tondeur, 2019; Inayatulloh, 2020).

2.5 Expectation Confirmation Theory

The Expectation Confirmation Theory, which is the basis of the Expectation Confirmation Model (ECM) has been widely used in the marketing domain to measure consumer satisfaction and post-purchase consumer behavior (Bhattacherjee, 2001; Bhattacherjee and Premkumar, 2004). In this case, we will measure user satisfaction and user behavior after using the virtual exhibition. According to the ECT, initially, users follow every process and rule to be able to use the virtual exhibition properly. Before using the virtual exhibition, users will form initial expectations for the virtual exhibition. After initially trying to use a virtual exhibition, users will form perceptions about the performance or services provided in the virtual exhibition and compare them with their expectations and expectations expectations (Davis, 1989; Bhattacherjee, 2001; Bhattacherjee and Premkumar, 2004). Because the author intends to evaluate how well and successfully the virtual display works, Expectation Confirmation Theory is crucial to this study. The level at which expectations meet the performance or service that the user feels will determine the level of user satisfaction. Satisfied users will form an intention to re-participate in the virtual exhibition, while dissatisfied users will stop using the virtual exhibition next time.

3. Research Model for Virtual Exhibition and Hypotheses Development

In this study, we utilized the Expectation Confirmation Model (ECM) to confirm the user's continued intention to use VE. VE displays information in a more entertaining and current educational context than traditional physical exhibitions. Visitors from various locations can enjoy all the content on VE through their smartphones or digital devices. Therefore, in this study, we propose to include three theories in the context of VE to be united in ECM. Therefore, this section will explain in detail the reasons for the factors adopted, as well as the reasons for adoption in the context of VE. Each of the adopted factors includes perceived ease of use, media richness, and perceived enjoyment. The reason we add to the perceived ease of use factor in the context of VE is that for new students (students or students) VE is considered difficult to use in facilitating educational exhibitions. VE is considered not easy to master by new users (learners) because they have no prior experience with it. So it requires a factor perceived ease of use in the context of VE to facilitate the use of technology and task performance for learners and to be an expectation that can determine the attitude of users towards the ease of adoption of technology.

The reason we added flow theory to the VE context is that VE will remain in use for a long time. Whether it is still in the pandemic phase or after the pandemic, VE will undoubtedly be used for a very long time. As a result, it requires an enjoyment element to stay at home and be glad to use VE because, in the absence of this, VE may be affected by people abandoning it. Given that technology is already widely accepted in society (among students), it requires an element of enjoyment. One of the reasons that we also change from the flow theory to the VE context is because it is to be used to explore various schools and various activities in the scope of education so that an enjoyment factor is needed so that users feel at home and do not get bored quickly when using VE. In prolonged use, factors can be the main determinants of behavioral intentions using VE. Tech-savvy users will not immediately assume the use of VE is easy-to-master, but it requires an enjoyment factor to be able to have a direct impact on the mastery of VE.

The Covid-19 pandemic has resulted in a high level of digital technology acceptance (for example, in Indonesia, elementary school children are required to accept online learning using digital media technology), as a result, all educational activities were conducted online .. All activities in VE allow interaction between booth keepers and users (students), so it is necessary to add a media richness factor to the context of VE. Information will be produced in the VE context when booth keepers and visitors exchange information. A media richness factor is required to be able to improve the flow of information in line with established procedures, which is necessary for information to be properly delivered and in compliance with protocols. In the context of VE to avoid ambiguous meaningful information, it is necessary to add a media richness factor as a complement to information that is right on target. Rich information and good communication will give the impression of greater trust, so VE must strive to convey information more efficiently and effectively through media richness formats. Media richness in the context of VE emphasizes how efficient and effective communication can be made by users with the media when visiting VE. The relationship between factors in conceptual form can be seen in Figure 3. In this study, we defined that the continuance intention for the use of VE in the scope of education is the intention of a person (learner, etc.) to continue using VE in the future.

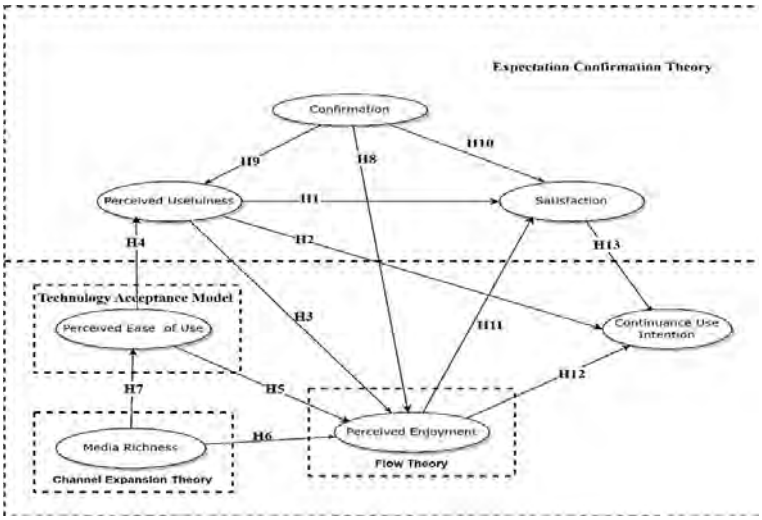

Figure 3: Research Model for VE Analysis

3.1 Perceived Usefulness

Perceived Usefulness is a user's perception of the expected benefits of using a technology (Davis, 1989). This relates to the performance aspect of the use of such technology (Venkatesh et al., 2003; Bhattacherjee and Premkumar, 2004). In addition, perceived usefulness describes the desire that arouses the intention to use technology (Jumaan, Hashim and Al-Ghazali, 2020). Perceived usefulness is also defined as the level of the user's assessment of the technology, with the hope of whether the technology can increase efficiency and a feeling of enjoyment for continued use (Jumaan, Hazarina and Al-ghazali, 2020; Park, 2020; Sasongko, Handayani and Satria, 2021).

In this study, perceived usefulness can be interpreted as the perception of a person or user regarding the benefits obtained when visiting VE. The benefits or uses of VE can be felt directly by users when visiting it so that visitors feel satisfied. The use of VE causes perceived enjoyment and of course, if it is enjoyable then it can cause an intention to continue the use of VE.

Perceived usefulness is the basis of the ECM because it has a positive influence on others, that is to say, perceived usefulness has a significant effect on satisfaction, continuance use intention, and includes perceived enjoyment. In particular, perceived usefulness has a positive relationship with satisfaction (Bhattacherjee and Premkumar, 2004; Limayem and Cheung, 2008; Ashfaq et al., 2020; Bölen, 2020; Park, 2020; Wu, Chiu and Chen, 2020; Sasongko, Handayani and Satria, 2021; Yan et al., 2021; Si et al., 2022; Wu et al., 2022), and affecting continuance use intention (Bhattacherjee, 2001; Bhattacherjee and Premkumar, 2004; Wu and Chen, 2017; Ritu and Elena, 2019; Ashfaq et al., 2020; Jumaan, Hashim and Al-Ghazali, 2020; Park, 2020; Sasongko, Handayani and Satria, 2021; Si et al., 2022). User satisfaction is an affective attitude towards a particular technological product by end users who interact with the product directly (Davis, 1989). When the user gets the benefits or uses of the VE he visits, then the user will also feel satisfied and get a sense of pleasure (enjoy) and this can certainly increase the intention to visit the VE as a continuous pickle. Therefore, we can hypothesize as follows:

H_1: Perceived usefulness influences satisfaction

H_2: Perceived usefulness influences continuance use intention

H_3: Perceived usefulness influences perceived enjoyment

3.2 Perceived Ease of use

Perceived ease of use is the perceived ease of acquiring proficiency in using technology. Perceived ease of use can affect acceptance intentions directly or indirectly through the perceived benefits of technology (B. Wu & Chen, 2017). Perceived ease of use is fixed on a person's intentions to the extent to which they believe that the use of a particular technology does not require difficult efforts to adjust (Yan et al., 2021). Perceived Usefulness is a user's perception of the expected benefits of using an information system (Oghuma et al., 2016). In addition, according to Davis (1989) perceived enjoyment is defined as the feeling of pleasure obtained when a user uses technology in the form of an information system product.

In the context of this study, perceived ease of use can be defined as the extent to which users believe that visiting VE through a system does not require considerable effort. . This indicates that it is simple to use, which contributes to or modifies the perception of enjoyment. We assert that perceived ease of use and perceived usefulness have a positive relationship and can influence intentions to use specific technologies or systems; this assertion is supported by (Park, Lee and Choi, 2018; Yan et al., 2021; Muñoz-Carril et al., 2022). Similarly, perceived ease of use is an important antecedent of user enjoyment when making virtual visits, this statement agrees with the findings of an investigation conducted by El-Said and Aziz (El-Said and Aziz, 2022).

When users feel the convenience or do not need to spend a lot of effort when using the system to visit VE, then users will feel the benefits or uses of the system. In addition, users will also feel a feeling of pleasure (enjoyment) when visiting VE. Therefore, the following we can hypothesize:

H_4: Perceived ease of use has a positive influence on perceived usefulness

H_5: Perceived ease of use influences perceived enjoyment

3.3 Media Richness

Media richness in the context of VE refers to how effective communication a user can communicate with the media when visiting VE. This is determined by several factors, namely the capacity to immediately respond (feedback), the number of communication channels or channels used, the level of personalization provided, and

the ability to communicate using natural language (Chen and Chang, 2018). D'Urso & Rains (2008) suggests that the amount of information that can be transmitted by various forms of communication depends on the media's capacity to provide various types of feedback over time. Richer information will inspire greater trust, so websites should seek to convey information through rich media formats by (Chen and Chang, 2018), and (Li andTsai, 2022). However, the choice of media format depends on the relationship between technology, the environment, and the internals of the organization. Meanwhile, Davis (1989) defines perceived enjoyment as a pleasant sensation obtained when users use an information system. Based on this definition, we assume that effective communication between users and the media when visiting VE will increase the sense of enjoyment and comfort (enjoy). If the user receives a response for a long time, communication channels are limited, and no personalization is provided, then we assume the level of comfort and pleasure that the user feels when visiting the VE will be reduced.

Meanwhile, the user's level of convenience when utilizing a system to access a virtual display is known as perceived ease of use (Bölen, 2020). Based on the Technology Acceptance Model (TAM) introduced by Davis (1989), perceived ease of use is one of the most important factors in the acceptance of a system. The presence of rich media as a communication channel has an impact on this. In order to make using technology systems more convenient for users, media richness can aid promote interaction and communication between users and technology systems. In these cases, the degree to which the media can effectively communicate in the VE will be gauged by its media richness. Therefore, we propose the following hypothesis:

H_6: Media richness has a positive influence on perceived enjoyment

H_7: Media richness has a positive influence on perceived ease of use

3.4 Confirmation

Confirmation is a form of affirmation of the command given. It is closely related to the user experience to confirm an expectation of a given command. Confirmation usually refers to the expectation of information that the user will obtain from the system used (Bhattacherjee, 2001). Confirmation focuses on users of technology who anticipate the suitability of its functionality (Jumaan, Hashim and Al-Ghazali, 2020). According to the ECM, the user of the technology feels an inner comfort, if the expectation of pre-acceptance of the technology proves to be pleasant and corresponds to its usefulness, as well as satisfactorily confirmed. Confirmation in the context of this study will have a connection to the use of VE itself. The factor influencing the level of use of VE is the level of comfort and the level of quality of the information obtained by the user. It is expected that the pre-acceptance of VE users is fulfilled in satisfaction and will experience enjoyment by perceived usefulness. According to Bhattacherjee (2001) and Oghuma et al (2016), users may be able to experience cognitive dissonance if their pre-acceptance usefulness is not confirmed during actual use. To reduce this, users can try to adjust their perception of usefulness to better match reality.

Confirmation will also increase the user's perception of usefulness, while disconfirmation will reduce user perception. Several studies mentioned that confirmation has a positive effect on perceived usefulness, and perceived enjoyment (Bölen, 2020; Dai, Teo and Rappa, 2020; Jumaan, Hashim and Al-Ghazali, 2020; Park, 2020; Franque, Oliveira and Tam, 2021; Gunawan et al., 2021; Pereira and Tam, 2021; Sasongko, Handayani and Satria, 2021; Si et al., 2022; Wu et al., 2022). Users will likely experience the same cognitive dissonance when it comes to perceived enjoyment, continuously adjusting their expectations to match reality. According to previous studies as well, confirmation affects user satisfaction (Bölen, 2020; Dai, Teo and Rappa, 2020; Franque, Oliveira and Tam, 2021; Pereira and Tam, 2021; Sasongko, Handayani and Satria, 2021; Si et al., 2022; Wu et al., 2022). When the information obtained matches or exceeds expected expectations, then confirmation is present to improve the user experience in obtaining benefits from the use of a system. In this case, confirmation will measure how much the user experience in participating in the virtual exhibition can meet user expectations. Therefore, such expectations lead to the following hypothesis:

H_8: Confirmation has a positive influence on perceived enjoyment

H_9: Confirmation has a positive influence on perceived usefulness

H_{10}: Confirmation has a positive effect on satisfaction

3.5 Perceived Enjoyment

The definition of perceived enjoyment is the level of pleasurable technology use, and this includes significant elements that may affect future technology use intentions (Park, 2020; Gunawan et al., 2021). The habit of using

IT continuously is a satisfaction that can be influenced by perceived enjoyment. Perceived enjoyment has a validated relationship with satisfaction (Park, 2020). In addition, perceived enjoyment is also an important factor that explains the intention of using technology continuously (Pereira and Tam, 2021). The perceived enjoyment of technology can determine the satisfaction and intention to stick with technology.

Perceived enjoyment in this study is defined as the feeling of satisfaction visitors have after viewing a virtual display. In addition, the degree of pleasurable attention in technology use can be utilized to determine perceived enjoyment (VE). The enjoyment of using VE indicates contentment and intention to continue using it.

According to Flow Theory by Mirvis (1991) Perceived enjoyment measures how much fun users have using technology to create a satisfying experience and keep their attention on the tasks at hand. Some previous research has shown that perceived enjoyment has a positive effect on satisfaction satisfaction (Ashfaq et al., 2020; Dai, Teo and Rappa, 2020; Park, 2020; Pereira and Tam, 2021), and also has a positive effect on the use and acceptance of technology so that it can increase continuance use intention (Ashfaq et al., 2020; Gunawan et al., 2021; Oghuma et al., 2016; Park, 2020).Therefore, the following can be hypothesized:

H_{11}: Perceived enjoyment has a positive influence on satisfaction

H_{12}: Perceived enjoyment has a positive influence on continuance use intention

3.6 Satisfaction

Satisfaction is happiness felt by IT application users when they feel comfortable with their use (Sasongko, Handayani and Satria, 2021). Satisfaction refers to a person's affective habits towards experience in the use of IT (Jumaan, Hashim and Al-Ghazali, 2020). Satisfaction is a strong driving factor towards user behavior for the intention to use IT on an ongoing basis. In this study, contentment refers to visitors' feelings of satisfaction regarding the virtual exhibition they visited.

Users' intentions to continue using IT are heavily influenced by satisfaction based on exposure via ECM. Previous research shows that satisfaction is an important factor for users to continue using an IT application (Ashfaq et al., 2020; Bölen, 2020; Jumaan, Hashim and Al-Ghazali, 2020; Park, 2020; Franque, Oliveira and Tam, 2021; Gunawan et al., 2021; Pereira and Tam, 2021; Sasongko, Handayani and Satria, 2021; Yan et al., 2021; Si et al., 2022). Dissatisfied users will use other services, while satisfied users will reuse existing products (Jumaan, Hashim and Al-Ghazali, 2020; Yang, 2021). According to the literature, if a user is pleased with their experience at the VE, they are far more likely to return than the dissatisfied to do so. Therefore, we propose the following hypothesis:

H_{13}: Satisfaction has a positive influence on continuance use intention

4. Research Methodology

4.1 Measurement Items

All measurement items in this study (*Appendix A*) were adapted from previous studies. Items for confirmation and continuance use intention were sourced from Bhattacherjee (2001), Oghuma et al. (2016), Park (2020), Wu et al. (2022), Jumaan, Hashim and Al-Ghazali (2020), Gunawan et al. (2021), Dai et al. (2020), Sasongko, Handayani and Satria (2021), Si et al. (2022), Bölen (2020), Pereira and Tam (2021), Franque (2021), and Wu et al. (2022). Perceived enjoyment and perceived usefulness items were derived from (Davis, 1989), Park (2020), Dai et al. (2020), Ashfaq et al. (2020), Pereira and Tam (2021), Bhattacherjee and Premkumar (2004), Limayem and Cheung (2008), Yan et al. (2021), Bölen (2020) Sasongko, Handayani and Satria (2021), Si et al. (2022), Wu, Chiu and Chen (2020), and Wu et al. (2022). The items for perceived enjoyment were sourced from Muñoz-Carril et al. (2022), Park, Lee and Choi (2018), and Yan et al. (2021). Media richness items were sourced from Park (2020), Dai (2020), Ashfaq et al. (2020), and Pereira and Tam (2021). The item satisfaction is sourced from Ashfaq et al. (2020), Franque, Oliveira and Tam (2021), Bölen (2020), Gunawan et al. (2021), Jumaan, Hashim and Al-Ghazali (2020), Park (2020), and Sasongko, Handayani and Satria (2021). These items were scored on a Likert scale from 1 to 5, with 1 indicating strongly disagree, 2 disagrees, 3 neutral, 4 agrees, and 5 strongly agrees.

4.2 Data Collection

In this study, data was gathered through a survey using an online questionnaire created with Google Form. The respondents for this study must be Indonesians who use social media and have visited virtual exhibitions related to education. This research questionnaire was distributed via virtual exhibition social media groups such as LINE, WhatsApp, Instagram, and Twitter to Indonesians who have social media. The data was collected in Indonesia

from November 2021 to December 2021. The total number of respondents who completed the questionnaire survey were 406 respondents, 85 respondents were eliminated as invalid because they did not meet the criteria of this study, namely they had never visited a virtual exhibition. As a result, we have 321 respondents with valid data responses based on the research criteria. Males have 44.55% and females have 55.45%. More details can be seen in Table 1.

Table 1: Demographic Characteristics

Items	Characteristics	Frequency	Percent (%)
Gender	Male	143	44,55
	Female	178	55,45
Age	≤ 18	41	12,77
	19 – 25	185	57,63
	26 – 33	63	19,63
	34-40	21	6,54
	< 40	11	3,43
Education	Below high school	10	3,12
	High school	53	16,51
	Bachelor's degree	243	75,70
	Graduate degree	15	4,67

5. Result

Partial Least Squares (PLS) was used to analyze valid data from 321 respondents. PLS is used to predict and assess the relationship between unobserved factors in items that were made (Muñoz-Carril et al., 2022). The SmartPLS application is used to analyze modeled items. To ensure the accuracy of the measurement model items, we perform a measurement model test. In addition, we ran a structural model, with the results showing that 11 hypotheses were accepted and 2 were rejected. The following can be used to explain the research findings.

5.1 Measurement Model Test

To ensure the accuracy of the measurement model, we use reliability tests, convergent validity, and discriminant validity. Convergent reliability and validity were measured using loading factors (LF), Cronbach's alpha (CA), composite reliability (CR), and average variance extracted (AVE). The values of LF, CA, and CR for each indicator exceed 0.7 (see Table 2). Table 2 also shows that the AVE value for each indicator exceeds the maximum limit of 0.5. Thus, this research model demonstrates the reliability of constructs and the validity of convergents that are good and acceptable. Convergent validity is rated as good if the AVE value exceeds 0.5, while the reliability of a good construct must have a CA and CR value exceeding 0.7 (Muñoz-Carril et al., 2022). As shown in Table 2, the AVE values range from 0.690 to 0.766. This means that the value is greater than the minimum limit of 0.5. Table 3 shows that the square root of the AVE for each construct is greater than all correlations between constructs. The maximum correlation of each construction pair is 0.746, while the minimum square root of the AVE is 0.831 (see the bold diagonal in Table 3). Therefore, it can be concluded that the measurement model of this study explains and shows that the reliability, convergent validity, and validity of discriminants are adequate.

Table 2: Loading Factors Value, Cronbach's Alpha, Composite Reliability, and AVE

Construct	Items	Loading Factors	Cronbach's Alpha	Composite Reliability	Ave
Confirmation	CFT1	0.852	0.798	0.881	0.712
	CFT2	0.845			
	CFT3	0.834			
Satisfaction	STF1	0.852	0.775	0.870	0.690
	STF2	0.848			
	STF3	0.791			
Continuance Use Intention	CUI1	0.853	0.826	0.896	0.742

Construct	Items	Loading Factors	Cronbach's Alpha	Composite Reliability	Ave
	CUI2	0.900			
	CUI3	0.829			
Perceived Enjoyment	PEJ1	0.879	0.847	0.907	0.765
	PEJ2	0.873			
	PEJ3	0.872			
Perceived Usefulness	PUS1	0.852	0.848	0.908	0.766
	PUS2	0.916			
	PUS3	0.856			
Perceived Ease of Use	PEU1	0.837	0.816	0.891	0.731
	PEU2	0.864			
	PEU3	0.864			
Media Richness	MRC1	0.808	0.782	0.872	0.695
	MRC2	0.860			
	MRC3	0.832			

Table 3: Discriminant Validity

	CFT	CUI	MRC	PEU	PEJ	PUS	STF
CFT	**0.844**						
CUI	0.601	**0.861**					
MRC	0.533	0.565	**0.834**				
PEU	0.538	0.508	0.526	**0.855**			
PEJ	0.659	0.564	0.549	0.557	**0.875**		
PUS	0.517	0.470	0.621	0.535	0.534	**0.875**	
STF	0.746	0.584	0.578	0.552	0.714	0.540	**0.831**

Note: The numbers in bold (diagonal elements) represent the square root of the AVEs.

5.2 Structural Model

Figure 4 shows the structural model's results. Two of the thirteen hypotheses were rejected (see Table 4). These two hypotheses were rejected because the p-values (0.181 and 0.138) were greater than the maximum alpha value (0.05), so H_3 and H_6 were rejected. In this test (see Table 5), the R^2 analysis can explain the structural model's strength, namely 40.3% of Continuance Use Intention, 27.6% of Perceived Ease of Use, 52.7% of Perceived Enjoyment, 36% of Perceived Usefulness, and 65.3% of Satisfaction.

Perceived usefulness, which is the result of this processing, significantly affects satisfaction and future use intention. Perceived use and satisfaction are significantly influenced by perceived simplicity of use. Media richness has a major impact on perceived ease of use. Confirmation, meanwhile, strongly influences satisfaction, perceived usefulness, and perceived enjoyment. Satisfaction and the inclination to continue using a product are substantially influenced by perceived enjoyment. Additionally, satisfaction greatly influences the intention to continue using a product. However, perceived usefulness and media richness have no significant influence on perceived enjoyment.

Table 4: Summary of the Structural Model Results

Hypotheses	Relationship			Original Sample	Sample Mean	t-value	p-value	Results
H1	PUS	→	STF	0.117	0.117	2.117	0.034	Supported
H2	PUS	→	CUI	0.165	0.165	2.622	0.009	Supported
H3	PUS	→	PEJ	0.127	0.139	1.338	0.181	Rejected

Hypotheses	Relationship			Original Sample	Sample Mean	t-value	p-value	Results
H4	PEU	→	PUS	0.361	0.363	5.627	0.000	Supported
H5	PEU	→	PEJ	0.187	0.183	3.384	0.001	Supported
H6	MRC	→	PEJ	0.152	0.141	1.483	0.138	Rejected
H7	MRC	→	PEU	0.526	0.531	9.585	0.000	Supported
H8	CFT	→	PEJ	0.412	0.414	6.141	0.000	Supported
H9	CFT	→	PUS	0.323	0.324	5.152	0.000	Supported
H10	CFT	→	STF	0.454	0.453	7.988	0.000	Supported
H11	PEJ	→	STF	0.352	0.353	5.367	0.000	Supported
H12	PEJ	→	CUI	0.250	0.256	2.782	0.005	Supported
H13	STF	→	CUI	0.316	0.313	3.438	0.001	Supported

Note: PUS: perceived usefulness; PEU: perceived ease of use; MRC: media richness CFT: confirmation; PEJ: perceived enjoyment; STF: satisfaction; CUI: continuance use intention

Table 5: Result of Determination Coefficient Test (R^2)

Parameter	R Square (R^2)	Percent (%)
CUI	0.403	40.3
PEU	0.276	27.6
PEJ	0.527	52.7
PUS	0.360	36
STF	0.653	65.3

Note: CUI: *continuance use intention*; PEU: *perceived ease of use*; PEJ: *perceived enjoyment*; PUS: *perceived usefulness;* STF: *satisfaction*

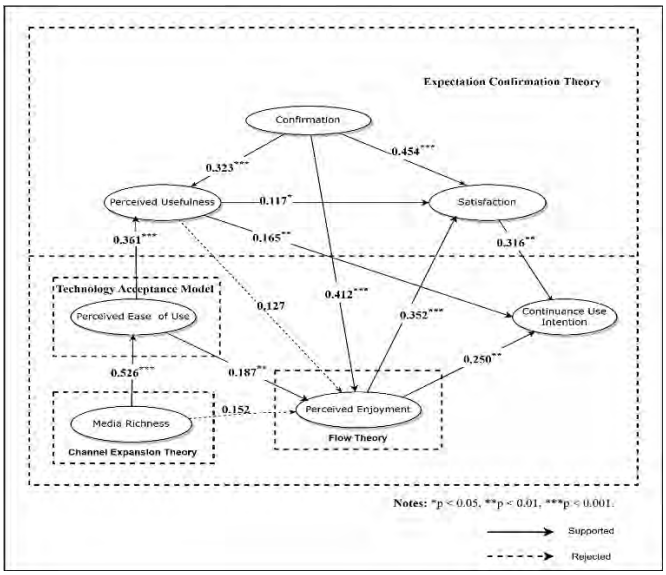

Figure 4: Result of the PLS VE Analysis

6. Discussion and Implications

In this section, it is critical to discuss our research findings in order to understand the relationship between factors that can influence the community's intention to continue visiting educational exhibitions using VE in post-pandemic the Covid-19. . First, it shows that STF is the strongest predictor (has the highest weight) of CUI when using VE, compared to PEJ, and PUS. These findings indicate that the STF is the same as previous studies, which have consistently significant effects on CUI, such as the findings of Ashfaq et al. (2020), Franque, Oliveira and

Tam (2021), Bölen (2020), Gunawan et al. (2021), Jumaan, Hashim and Al-Ghazali (2020), Park (2020), Sasongko, Handayani and Satria (2021). It makes sense given the findings indicating how satisfied VE customers in Indonesia were to visit educational exhibitions using VE on a regular basis. The results of the analysis also show that PEJ has the second highest result after STF. PLS analysis reveals that PEJ has a positive effect on CUI, implying that using VE gives VE customers in Indonesia a sense of enjoyment. However, the findings of PEJ that were considered to have a significant effect on CUI were inconsistent according to several findings, such as the findings of Park (2020) and Gunawan et al. (2021) that state that PEJ has a significant effect on CUI, but this differs from the findings of Pereira and Tam (2021) that state that PEJ has no significant effect on CUI. Furthermore, the third factor is PUS, which has the smallest number between STF and PEJ. Based on the findings, PUS has an effect on CUI. It is inconsistent with previous studies, for example the findings of Wu (2022), Bölen (2020), Franque, Oliveira and Tam (2021) who discovered that PUS did not have a significant effect on CUI, but this is different from the findings of Ashfaq et al. (2020), Jumaan, Hashim and Al-Ghazali (2020), Park (2020), Pereira and Tam (2021), Sasongko, Handayani and Satria (2021), Si et al. (2022), Wu and Chen (2017) who discovered that PUS had a significant positive effect on CUI.

Second, the results prove that CFT is a strong predictor and has a positive effect on PEJ, CFT itself has the highest number among the 3 variables (2 does not affect PEJ). An expectation of information that users will get from the VE system can be said to be enjoyable if it is successfully confirmed according to their expectations. In addition to CFT, the PEU factor has also been shown to affect PEJ. Based on the study's findings, PEU has a positive impact on PEJ; these findings provide insight into how using VE for educational participants can provide pleasure to customers who use VE in Indonesia. However, based to the PLS analysis, two factors, namely PUS and MRC, have no effect on PEJ. This is most likely due to the fact that perceived usefulness (PUS) was not obtained directly by VE customer users in Indonesia during the Covid-19 pandemic, and perhaps VE did not have rich media (MRC) that could provide information in a pleasant way for these customers. Third, the results show that PEJ, PUS and CFT have proven to have a positive effect on STF. These findings are consistent with previous studies such as by (Sasongko, Handayani and Satria, 2021), (Bölen, 2020), (Si et al., 2022), and (Wu et al., 2022). Out of the three factors, the highest result is the CFT factor. The high number can be caused by VE users feeling inner comfort, so the expectation of VE pre-acceptance can be proven to be satisfactorily confirmed. Following CFT, the next sequence is PEJ, indicating that the enjoyment felt by customers in Indonesia using VE during the Covid-19 pandemic can determine their satisfaction and intention to continue using VE when participating in educational exhibitions. So, PEJ in this context can be defined as the sense of satisfaction gained by the user after using and visiting the VE. Next is PUS, which, if defined in the context of this study, is a person's perception of the benefits gained when visiting VE. As a result, because customers (respondents in this study) get the perceived benefits when using VE, they are satisfied (indicating that PUS influences STF).

Fourth, the results of this study show that PUS can be influenced by CFT and PEU. Among CFT and PEU, the strongest factor that has a positive effect is PEU. These findings agree with previous studies such as by (Wu and Chen, 2017), (Park, 2020), (Wu et al., 2022), (Jumaan, Hashim and Al-Ghazali, 2020), (Gunawan et al., 2021), (Dai et al., 2020), (Sasongko, Handayani and Satria, 2021), (Si et al., 2022), (Franque, Oliveira and Tam, 2021), and (Park, Lee and Choi, 2018; Yan et al., 2021; Muñoz-Carril et al., 2022). The benefits and uses of VE are certainly the results that PEU can provide. If customers in Indonesia find it easy to use VE, then VE can be claimed to be successful in providing its benefits and applications. Furthermore, the benefits and uses of VE can be confirmed to be useful if its loyal visitors always use VE on an ongoing basis.

6.1 Theoretical Implications

The findings of this study can provide theoretical knowledge regarding the relationship between factors (factors of four theories) according to our analysis that the relationship between factors can influence the intention to continue using VE after the Covid-19 pandemic. First, this study is the first study to explore the continuity of the use of VE in the context of education. Previous studies by El-Said and Aziz (2022), Kim and Hong (2020), and (Kamariotou, Kamariotou and Kitsios, 2021) primarily focus on the use of virtual tours. Second, this study successfully integrated the theory of TAM, Flow, and media richness into CET, thus providing a more comprehensive understanding of the factors that drive use in the continued intention of using VE. From TAM, this study emphasizes the importance of the ease-of-use factor as one of the driving factors of the sustainability of the use of VE. Reflecting on the research findings that media richness (CET) has no effect on perceived enjoyment (PEJ), this provides insight into the critical role of CET features that are rich in communication media in strengthening the relationship between visitors and VE. This research also shows how the role of flow theory, represented by perceived enjoyment, in encouraging the sustainability of the use of VE. Third, this study also

succeeded in confirming the CET theory in the context of continuing the use of VE, which previously not many people had explored.

6.2 Practical implications

This study has a number of implications for VE builders and developers. The proposed model can explain a series of relationships between factors that VE providers and their developers can manipulate to increase the intention to use VE on an ongoing basis. This study may provide knowledge interventions for VE providers to focus on increasing the intention to use VE on an ongoing basis. First, it is critical for VE providers and developers to focus on the satisfaction factor, because our findings show that it has a significant impact on the user's intention to continue using VE. It is critical for VE developers to consider usability and user experience factors in order to maintain user satisfaction in using VE in the future.

Second, VE providers and developers must pay attention to user-perceived enjoyment factors, as these factors have a significant effect on continued use intention. Providing a sense of enjoyment to VE customers can help them have a positive and enjoyable experience while reaping the benefits of participating in virtual exhibitions. Therefore, it is critical for developers to concentrate on developing VE while paying attention to perceived ease of use and perceived usefulness factors, as this can confirm all user expectations to use VE on a regular basis. Developers should make VE as user-friendly as possible. One approach is to use usability and user experience design principles while considering who the VE is designed for and making sure the VE design is visually appealing by using various images, narratives (what topics or stories do you want to offer in VE), as well as limiting file sizes for easy access.

Third, VE providers and developers must pay attention to perceived usefulness factors, because our findings show that these factors have a significant impact on the intention to continue using VE. Therefore, it is critical for the developer to pay attention to the perceived ease of use factor (because this factor significant influence perceived usefulness), so that the appearance of the VE interface is not messy, easy to understand, and can display information clearly. Focusing on perceived ease of use factors can confirm all VE users' expectations in seeking information and create unforgettable experiences when using VE in the future.

7. Conclusion and Limitation

This study describes a structured and methodical approach that combines several theoretical models, namely channel expansion theory, technology acceptance model, flow theory, and expectation confirmation theory, in order to gain understanding and predict user intentions to maintain sustainable use of Virtual Exhibition (VE) after the pandemic Covid-19. It should be noted that in the context of VE, 11 interconnected factors play a role in influencing the intention to use VE in a sustainable manner. Therefore, it should be emphasized that; First, perceived usefulness, perceived enjoyment, and satisfaction factors all have a significant influence on continued use intention toward VE long-term sustainability. Second, perceived ease of use and confirmation factors have a significant impact on the perceived usefulness of using VE in a sustainable way. Third, the perceived ease of use, perceived usefulness, and confirmation factors all have a significant impact on the perceived enjoyment of using VE on a continuous basis. Fourth, the role of perceived enjoyment, confirmation, and perceived usefulness has a significant impact on user satisfaction for long-term use of VE. Fifth, the media richness factor has a significant impact on the perceived ease of use of VE.

Furthermore, we can highlight a relationship between 2 factors (perceived usefulness and media richness) that do not significantly influence perceived enjoyment for the intention to use VE continuously. Thus, we can emphasize the importance of ensuring service quality based on perceived usefulness, developing features rich in information and communication media, and designing user interfaces that are easy to use, fun, and satisfying so that customers are interested in using VE continuously and sustainably. Overall, the findings of this study enrich our knowledge and insight into understanding the use of virtual exhibitions in educational exhibitions after the Covid-19 pandemic.

There are some limitations to this study. First, we investigate the use of VE in educational exhibitions during the Covid-19 pandemic in only one country, Indonesia. We do not believe our findings can be generalized to other countries around the world. Second, we felt that when we sampled respondents, we did not account for age. For us, the younger generation is more familiar with emerging technology trends and prefers to use VE when participating in online educational exhibitions. In comparison to the older generation, who may still stutter when using technology and are unaware of the trend of virtual reality technology in online-based educational exhibitions. Third, we did not specifically consider the sample of respondents in terms of education; perhaps

students who are temporarily in college are not more interested in participating in educational exhibitions than high school students or recent college graduates. Finally, we realized that the survey we shared did not emphasize that those who were required to fill out the questionnaire survey were people who had used VE for educational exhibitions. As a result, out of a total of 406 respondents, 85 respondents' data could not be processed because they did not meet the research requirements.

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Appendix A: Item of Measurement

Factor (Construct)	**Item of Measurement**	
Confirmation	CFT1	My experience while visiting a virtual exhibition was better than what I expected
	CFT2	The level of service provided by the virtual exhibition organizers is better than I expected
	CFT3	In general, most of my expectations regarding online exhibitions are met when participating in virtual exhibitions
Satisfaction	STF1	I feel satisfied with the virtual exhibition that I participated in
	STF2	I love the experience of visiting the exhibition online during the virtual exhibition
	STF3	I feel satisfied with the information I got after participating in the virtual exhibition
Continuance Use Intention	CUI1	I am interested in re-participating in the virtual exhibition in the future even though the pandemic has ended
	CUI2	I predict that I will continue to participate in virtual exhibitions even though the pandemic has ended

Factor (Construct)	Item of Measurement	
	CUI3	I intend to continue using virtual exhibitions to view online educational exhibitions compared to other ways even though the pandemic is over
Perceived Enjoyment	PEJ1	I feel happy when I visit the virtual exhibition
	PEJ2	Visiting the virtual exhibition gave me a sense of comfort
	PEJ3	I enjoy the process when I visit the virtual exhibition
Perceived Usefulness	PUS1	In general, virtual exhibitions are useful for finding information related to schools
	PUS2	Through virtual exhibitions, I was able to obtain information related to school more productively
	PUS3	Through virtual exhibitions, I can get information related to schools faster
Perceived Ease of Use	PEU1	It is easy for me to understand the use of virtual exhibitions
	PEU2	Easy for me to interact with a virtual exhibition
	PEU3	It is easy for me to be proficient in using virtual exhibitions
Media Richness	MRC1	The virtual exhibition allows me to get answers quickly from the booth I asked
	MRC2	The virtual exhibition provides various channels to communicate with booth keepers
	MRC3	If there are further questions, the virtual exhibition allows me to communicate more deeply with the booth I want

