Exploring Drivers and Barriers of Cyber Counseling: A Perspective from Indonesia

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Abstract—COVID19 pandemic has created a global crisis on mental health by putting pressure and stress. The survey showed a significant surge of mental health problem cases between 2020 to 2022. However, potential usage of cyber counseling as a plausible solution for mental health has not been fully explored. Therefore, this research aimed to analyze possible drivers and barriers on behavioral intention to use cyber counseling to see if it will be best utilized and see more usage. This research used a quantitative method, using Partial Least Square-Structural Equation Modeling. The model was built from seven drivers and seven barriers. The result showed that performance expectancy, facilitating conditions, attitude, and perceived behavioral control as main drivers of intention to use cyber counseling while information privacy concern and security risk as main barriers of intention to use cyber counseling. These results can provide recommendations for cyber counseling service providers to improve and to leverage their cyber-counseling services so that the use of cyber counseling constantly sees significant increase.

Index Terms—Cyber counseling, drivers, barriers, mental health, online counseling, intention to use.

I. INTRODUCTION
Mental health is an inseparable part of humans’ well-being. It is one of the human rights which is regulated by Indonesia government through law. Although regulation is already presented, National Basic Health Research conducted in 2018 showed that 9.9% of Indonesia citizens above 15 years old had emotional problems and 6.1% of which had depressions [1]. This condition has grown worse since the COVID-19 pandemic. COVID-19 has created global crisis on mental health worldwide, including Indonesia [2]. Research conducted in 2022 showed that there were surges in the amount of people having mental health problems between 2020 to 2022 [3]. The number increased from 70.7% in 2020 to 82.5% in 2022. Out of this number, 71.7% suffered anxiety, 72.9% suffered depression, 84% suffered psychological trauma, and 85.1% had suicidal thoughts. Even worse, 52% of people who were suicidal had thought of ending their life while 36% of them had tried to end their life.

Though pandemic had put pressure on mental health of people, it helps accelerate digital transformation and technology development. Such transformation also happens in treatment for mental health problems by means of cyber counseling. Cyber counseling is professional counseling practice done between counselors and their clients whereas they are not present in the same place physically, so they communicate through computer [4]. The use of cyber counseling is steadily growing around the globe. In China, cyber counseling is implemented using text-based online chat platform, WeChat [5]. On the other hand, people in Hongkong implement cyber counseling through videoconference and short message [6]. In Indonesia, such services exist mostly in form of mobile application or website, such as Riliy, Ibunda.id, or Bicarakamu.id. While it seems that cyber counseling has become a common thing, its use is not as common as it seems. It might have seen an increase at the start of the pandemic, around 70% compared to pre-pandemic [7]. However, this trend seems to be declining and stays on more stable number at 13% to 17% compared to more stable number at 32% before [8]. In addition, only 696 cyber counseling sessions were done from total 1200 of free sessions in 2021 which most of incomplete sessions due to clients not present or canceling the session [9].

There are still many obstacles present in cyber counseling such as negative stereotypes regarding mental health problems, security issues and data privacy [10]. Counselors reported that it is hard to identify and to find nonverbal clues such as gestures and facial expressions during cyber counseling [11]. Counselors’ low competency also plays part and becomes one of main hindrances regarding cyber counseling [12]. People’s preference and attitude toward cyber counseling are another concern. Most people tend to talk to their closest friends instead of having counseling with professionals [13]. In research conducted by Chan et al., only 25% of respondents prefer to be helped by professionals, especially through cyber counseling [14].

Communication is a key in cyber counseling. However, lack of expression and gesture in cyber counseling hinders effective transfer of messages [15]. In addition, clients tend to close themselves or being defensive in counseling which makes it harder for counselors to communicate, probably preventing them from getting more information to help clients [16]. Pressing them might lead to bad experience which further impact communication between client and counselor [17]. Media and technology play major parts in cyber counseling as it will not function properly without their availabilities [18]. For example, loss of connection or electricity may result in information loss during cyber counseling [19]. On the other hand, data privacy, risk of information theft, and lack of proper infrastructures have introduced more concerns involving media and technology in cyber counseling [20].

Regarding the ethics and regulations of cyber counseling, there are several prevalent issues such as data validity, anonymity, confidentiality, lack of understanding, privacy, and credibility [21]. While some foreign countries have enacted laws regarding cyber counseling, it may not be the case in Indonesia as there is no regulation and framework set for cyber counseling [22]. In addition, there is no official institution or any agency which has authority to rule or to audit cyber counseling practices. Such institutions are needed to ensure that counseling processes are carried out properly and any behavior against proper conduct will be sanctioned accordingly [23].
As mentioned earlier, there are several issues related to cyber counseling. This research investigates why the use of cyber-counseling tends to be on the lower side although digital health transformation has been popular lately, which in turn increases its accessibility. To figure it out, this research focused on identifying drivers and barriers to the use of cyber counseling. Understanding these can help improve the adoption of cyber counseling [24].

II. LITERATURE REVIEW
Cyber Counseling
Cyber counseling is defined as communication and therapeutic action which is done by counselors through cyber space [25]. This practice of professional counseling between counselors and their clients can be utilized through not only synchronous, but also asynchronous media [26]. What separates cyber counseling from traditional counseling is the use of internet connection and absence of both participants in the same space [4]. As technology develops, the use of cyber counseling also gains popularity [10]. Multiple channels and media can be utilized to deliver communication in cyber counseling such as videoconference, website, text-based online chat, and many more [27]. Cyber counseling offers several advantages such as comfort, anonymity, responsiveness, autonomy, and low cost [20].

Some research has been done in the past regarding cyber counseling. It revealed that cyber counseling could help as a complement to traditional counseling [28]. While other research showed that cyber counseling can help solve mild mental health problems, it concluded that cyber counseling might not be suitable for complex cases such as addiction, schizophrenia, and Post-Traumatic Stress Disorder [29]. However, research said that cyber counseling might help to a certain degree, for example by helping clients to follow doctors’ guidance dutifully in drug therapy [30]. Based on those explanations, it can be concluded that cyber counseling is a counseling which is done virtually through various remote communication media between counselors and their clients to solve their problems.

The Underlying Theories
In information systems (IS) studies, there are various theories of IS acceptance. The most used are Unified Theory of Acceptance and Use of Technology (UTAUT), Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB), and Information Resistance Theory (IRT). UTAUT was proposed based on several existing theories aiming to develop a unified comprehensive theory for modeling technology acceptance and adoption [31]. Regarding cyber counseling and mental health studies, Braun et al. adopted UTAUT to investigate factors affecting intention to use cyber counseling which used various media, such as telephone, videoconference, and virtual reality [32]. In addition, UTAUT can also be extended with various factors or variables such as anxiety and resistance to observe users’ acceptance and intention to use technology [33], [34].

Next, TPB can be utilized to investigate the human’s decision regarding behavior [35]. TPB may seem like UTAUT, since both theories adopt Theory of Reasoned Action (TRA). However, unlike UTAUT, TPB is not strictly limited to behavioral intention regarding the use of technology. Some researchers adopted TPB for study related to cyber counseling. A Research in China by Teo et al. used TPB to find factors influencing intention to use cyber counseling across different generations [24]. This research showed that attitude, perceived behavior control, and subjective norm positively affected intention to use cyber counseling. On the other hand, a literature review in cyber counseling adoption using TPB was conducted regarding the low use of cyber counseling by adults [36]. For this research, attitude and perceived behavior control were commonly found to be significant factors to intention to use cyber counseling.

While most of those theories mentioned mainly talk about behavioral intention to use or adopt technologies, IRT can be used to examine the cause of users’ resistance toward adoption of technologies [37]. Resistances may happen while adopting new technologies because it changes users’ routine and behavior. These changes are interpreted by users as a threat. Therefore, users tend to preserve the current condition [38]. Users show resistance when they feel barriers or obstacles caused by new technologies. IRT divides these barriers into usage barrier, risk barrier, tradition barrier, image barrier, and value barrier. Past research did not only adopt these barriers to investigate what may cause resistance among users but may also add other barriers which deem fit. Some studies in digital health have implemented IRT to find barriers that affected the intention to use technologies. For example, IRT was adopted to find barriers in using digital contact tracing application for COVID-19 and what factors that may prevent continuous use of e-health innovations, including cyber counseling [39], [40].

Partial Least Square – Structural Equation Modeling
Partial Least Square – Structural Equation Modeling (PLS-SEM) is a variance-based method to find the relation between observed variables through quantitative testing on theoretical models [41]. This approach is an explanatory method that aims to test the relation between constructs in a model and finding out the influence of the constructs to the others [42], [43]. PLS-SEM has two types of models as such inner model and outer model [44]. The inner model shows relationships between latent constructs while outer model shows predictive relationship between latent constructs and their indicators [44].

PLS-SEM does not need a big sample size, but it can get better accuracy by having a bigger sample size [45]. To evaluate a model using PLS-SEM analysis, some tests need to be done such as convergent validity test, discriminant validity test, reliability test, R-Squared ($R^2$) test, and significance test. Outer model testing is conducted using reliability test, convergent validity test, and determinant validity test. Specifically, while testing the outer model, the value of outer loading is a main concern. To increase and get valid value for composite reliability and Average Variance Extracted (AVE), outer loading value should be between 0.40 and 0.70. Therefore, any indicator below 0.40 should be removed. However, removal of such an indicator should be considered if it will matter in increasing value of composite reliability and AVE [46].
III. THEORETICAL DEVELOPMENT AND RESEARCH HYPOTHESIS

This research built a model based on factors discussed in UTAUT, IRT, and TPB. It is widely acceptable to combine theories as different theories can supplement each other. For example, Wang et al. combined TPB and TAM, while Lazuras & Dokou mixed TAM and TAM 2 [47], [48]. Such theories can also be expanded or modified by adding new factors or variables [24], [49]. The resulting research model can be seen in Fig. 1. There are 7 drivers, 7 barriers, and 4 moderating variables which were adopted and developed from existing theories.

![Figure 1 Proposed research model](image-url)

**Performance Expectancy**

Performance expectancy is the level of users’ perceived belief on how the adoption of technology may affect their performances in completing tasks [50]. Performance expectancy shows what users may think about how cyber counseling impacts their mental well-being [34]. It was said that performance expectancy was the most significant factor that influenced the intention to use technologies [51]. In addition, past research by Hoque & Sorwar and Lazuras & Dokou showed that performance expectancy was a big factor in influencing the intention to use technologies and services related to counseling and mental health [48], [49]. In cyber counseling, some aspects such as lack of gesture and nonverbal cues may impact the effectiveness of cyber counseling which is also part of concern regarding performance expectancy. Therefore, we hypothesize as follows:

H1: Performance expectancy will positively affect the intention to use cyber counseling.

**Effort Expectancy**

Effort expectancy is users’ perception of how difficult it is to carry on tasks while using the technologies. It means how easy it is to use cyber counseling. It was reported that effort expectancy showed a positive effect on intention to use technology related to mental health [49]. Some obstacles related to effort expectancy were ease of use and the needs of special tools for conducting cyber counseling [34]. In contrast, one of research on internet-based psychological treatment showed that effort expectancy showed no significant impact on the intention to use cyber counseling [52]. Considering these contrary results, effort expectancy was included in this research to be investigated. Therefore, we hypothesize that:

H2: Effort expectancy will positively affect the intention to use cyber counseling.

**Social Influence**

Social influence is the level of trust which people hold in services or technologies so that they will recommend those to people around them. It was reported that social influence had a strong positive impact on the intention to adopt technologies [49]. In the past, it was evident that the same result occurred to acceptance of cyber counseling and mental health online treatment such as anxiety in general [32], [34]. Based on those results, we examine social influence as one of the drivers of intention to use cyber counseling. Thus, we formulate hypothesis as follows:

H3: Social influence will positively affect the intention to use cyber counseling.

**Facilitating Conditions**

Facilitating conditions is any requirement or condition that may encourage the use of technology. This definition may be associated with any resource possessed by users to use cyber counseling. Adequate support, such as information related to procedure or technical support, can push more people to use it [34]. On the other hand, failure to identify resources, absence of
Conducive space, and lack of knowledge are the most prominent reasons that may impact cyber counseling process. Judging by its importance, we deemed it necessary to include facilitating conditions as drivers. Therefore, we hypothesize as follows:

**H4:** Facilitating conditions will positively affect the intention to use cyber counseling.

**Attitude**

Attitude refers specifically to the beliefs, values, and feelings of people regarding the use of service or technology [47]. These values or beliefs may be perceived as positive or negative [24]. In the field of psychology, the relation between attitude and intention has been well established while in information technology theory, it is one of most influential factors to intention to adopt technology [35], [53]. Attitude shows positive relation to intention to use online counseling in past research conducted in China [24], [47]. Furthermore, similar results came up in another study in mental health by [36]. Therefore, we hypothesize as follows:

**H5:** Attitude will positively affect the intention to use cyber counseling.

**Perceived Behavioral Control**

Perceived behavioral control refers to self-confidence on using or adopting technologies [24]. Meanwhile, it can also be referred to perception on difficulty which is directly connected to availability of individual resources, opportunities, and abilities [47]. Studies showed that perceived behavioral control has significantly influenced the intention to use cyber counseling [24], [47]. In addition, a study in mental health by [36] showed similar results. Thus, we also hypothesize that:

**H6:** Perceived behavioral control will positively affect the intention to use cyber counseling.

**Perceived Reputation**

Perceived reputation is a cognitive evaluation from users towards credibility of the evaluated objects based on previous actions [48]. Reputation for counselors or psychologists is important as it can give information on quality of counselors, which in turn can help to build trust between counselors and clients [49]. Reputation is also able to help improve counseling process and its performance [50]. Counselors’ reputation may be available through online review or testimonies as well as referral through conversation [51]. Prior research showed that reputation affected the intention to use technology both directly and indirectly [48], [52]. Therefore, we hypothesize as follows:

**H7:** Perceived reputation will positively affect the intention to use cyber counseling.

**Information Privacy Concern**

Concern about information privacy is common among issues related to information technology. Cyber counseling is no exception. For example, private information such as name, health status or condition, and phone number may be needed for registering before using cyber counseling [53]. Such private information may be abused by irresponsible people. Information privacy concern is one of major reason people for resisting such application or system [40]. It can cause uncertainty which then will cause resistance among users [37]. Seeing how impactful information privacy concern in hindering people to use technology, we propose hypothesis as follows:

**H8:** Information privacy concern will negatively affect the intention to use cyber counseling.

**Security Risk**

Security risk is defined as a risk of losing control of information in possession in case of attack by individuals with malicious intent or through fraud inside organization related to data theft or vulnerabilities in security [40]. It can be the main barrier which causes resistance among people who use cyber counseling, especially one that is based on mobile applications or websites. Security risk can be classified as functional risk which is identified as unreliability and uncertainty of adopted technology to work properly [37]. Considering these factors, we hypothesize as follows:

**H9:** Security risk will negatively affect the intention to use cyber counseling.

**Usage Barrier**

The usage barrier relates to incompatibility between the innovation and what people usually do [39]. Usage barrier can cause resistance which will make people reluctant to use technology [40]. However, other research showed that it will not have significant impact on intention to use technology [54]. Considering those contrasting result, we further proposed hypothesis as follows:

**H10:** Usage barrier will negatively affect the intention to use cyber counseling.

** Tradition Barrier**

Tradition barrier related to routine or behavior that people do before the use of technology. In the context of cyber counseling, tradition barrier was related most to offline consultation preference, doubt in using applications, negative attitude toward technology in general, and so on [39]. Previous study revealed that tradition barrier hindered intention to use technology [54], [55]. This is consistent as people tend to resist change and defend the status quo. To investigate further of relationship between this barrier and intention to use cyber counseling, we hypothesize as below:

**H11:** Tradition barrier will negatively affect the intention to use cyber counseling.

**Image Barrier**

Image barrier, which is categorized as psychological barrier, is associated with reluctance towards the innovation caused by perception of user about its brand, developer, or origin [56]. This is usually related to negative presumption or stereotype circulated around that technology which can be a blocker for adoption as it positively affects resistance of people who will use the technology [55]. Prior research showed that such barriers generally occurred as people tend to believe that offline counseling was more effective compared to cyber counseling [39]. Based on those, we hypothesize as follows:

**H12:** Image barrier will negatively affect the intention to use cyber counseling.

**Value Barrier**

Value barrier refers to the view that see innovation as something that offers no advantage or positive impact compared to other alternatives [37]. When less value is offered by an innovation then users would be more reluctant to adopt it. Value barrier can be divided into infrastructure and resource which later may have implications to its cost and affect users’ expectations [39]. However,
research by Santos and Ponchio showed that value barrier had no significant effect on the intention to adopt innovation [56]. Hence, we hypothesize as follows:

H13: Value barrier will negatively affect the intention to use cyber counseling.

Counselors’ Availability

It was stated that there is a relationship between the supply of counselors and availability of mental health services [57]. In addition, this problem affects people and their intention to use mental health services [58]. Furthermore, shortage of certified clinical counselors/psychologists happened while the demand started to increase especially when pandemic hit [59]. Therefore, we hypothesize as follows:

H14: Counselors’ availability will negatively affect the intention to use cyber counseling.

IV. METHODOLOGY

Research Design, Data Collection, Population and Sample

This research was classified as explanatory research, which is research that focuses on learning causal relationship between variables to emphasize situations and problems being studied to explain their relationship [60]. It is also based on quantitative approaches. Therefore, it used survey as data collection method. Survey is a nonexperimental method which does not involve supervision or manipulation on variables [43]. The survey was done by using a questionnaire consisting of several statements based on variables’ indicators adjusted from past studies. Respondents would rate statements using Likert’s scale rating from 1 to 5 based on their conformity with the statements.

This research took sample of users and potential users of cyber counseling services in Indonesia. Cyber counseling services were not limited to websites or mobile applications, but also included services provided by healthcare providers. The method used for sampling was purposive sampling. In addition, a readability test was done prior to data collection to ensure comprehensiveness and clarity of the survey. Then, the questionnaire was distributed online using online questionnaire platform through social media, mainly Twitter, Facebook, LinkedIn, and Instagram, and community platform like Reddit or Telegram, which then were analyzed. The survey was conducted starting on 28 November 2022 and lasted for 18 days.

Data Analysis

Data analysis was carried out using PLS-SEM using SmartPLS 4 software. Model estimation in PLS-SEM was carried out by combining indicators on model linearly to form composite variables which are variables that statistically or conceptually related [45]. These variables were representative of the constructs and were considered as valid representations of conceptual variables being tested [46]. In short, PLS-SEM was used in this research to test the conceptual model built based on Unified Theory of Acceptance and Use of Technology, Theory of Planned Behavior, and Innovation Resistance Theory to investigate variables which might be drivers and barriers to behavioral intention to use cyber counseling. The data collected was processed and then imported into SmartPLS4. Then, the model was built based on conceptual model as seen on Fig. 1. After that, several tests were conducted on the model. The tests were as follows: reliability test, convergent validity test, determinant validity test, R-squared test, and significance test using bootstrapping. In addition, multigroup analysis was conducted to find out the influence of moderating variables.

V. RESULT AND ANALYSIS

Data Collection

Minimum sample size of 156 were selected based on inverse square root method. Aiming for 80% of statistical power with minimum path coefficients between 0.11 to 0.2 and significance level of 5% would require 155 samples [45]. This was also in compliance with calculation using G*Power application which resulted in 153 for the minimum sample size needed. The demographic data is divided into several categories which are based on their gender, age, occupation, experience in using cyber counseling, income, preferable media/channels for cyber counseling, origin, and education as can be seen on Table 1. From total of 156 respondents, 53% were female while most of respondents are between 24 to 49 years old which means most of them were in productive age. Meanwhile, 40% of respondents work in the private sector whereas the rest either work in public sector, entrepreneurship, or even students. Based on income, the majority, with total of 46%, have monthly income between IDR 5,200,000 to 16,200,000 while based on media preferences, people chose cyber counseling over text-based messaging or chat. Result also showed that most of respondents originated around Java Island (86%) and most had bachelor’s degree (62%). Interestingly, many respondents had no experience in using cyber counseling which was useful to get insight on how they perceive the technology as nonusers.

<table>
<thead>
<tr>
<th>Demographic Variable</th>
<th>Percentage</th>
<th>Demographic Variable</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>47%</td>
<td>Experience in Using</td>
<td>77%</td>
</tr>
<tr>
<td>Female</td>
<td>53%</td>
<td>Cyber Counseling</td>
<td>23%</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>Educational Degree</td>
<td></td>
</tr>
<tr>
<td>&lt; 5</td>
<td>0%</td>
<td>No Experience</td>
<td></td>
</tr>
<tr>
<td>5-9</td>
<td>0%</td>
<td>Had Experience</td>
<td></td>
</tr>
<tr>
<td>10-14</td>
<td>0%</td>
<td>No Degree</td>
<td></td>
</tr>
<tr>
<td>15-19</td>
<td>3%</td>
<td>Elementary School</td>
<td></td>
</tr>
<tr>
<td>20-24</td>
<td>20%</td>
<td>Junior High School</td>
<td></td>
</tr>
<tr>
<td>25-49</td>
<td>76%</td>
<td>Senior High School</td>
<td></td>
</tr>
<tr>
<td>50-69</td>
<td>1%</td>
<td>D1/D2/D3</td>
<td>8%</td>
</tr>
<tr>
<td>&gt; 70</td>
<td>0%</td>
<td>S1/D4</td>
<td>62%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S2/S3</td>
<td>16%</td>
</tr>
</tbody>
</table>
Measurement Model Testing

First, we conducted measurement model testing using reliability test, convergent validity test, and discriminant validity test. To be deemed as valid in composite reliability test, composite value needs to be equal or more than 0.70 [44]. To reach that value, it is permitted to remove indicators whose outer loading is less than 0.40 [46]. Therefore, we ran PLS several times to get the desired result and remove some indicators during the process. After the third run, we reached a valid reliability value which can be seen in Table 2. For convergent validity rest, we checked if Average Variance Extracted (AVE) of each variable is above 0.50 [44]. As seen on Table 2, the AVE of each variable has reached the required value. Therefore, it can be concluded that convergent validity result was valid.

Table 2 Composite Reliability Test Result

<table>
<thead>
<tr>
<th>Variables</th>
<th>Cronbach's alpha</th>
<th>Composite reliability</th>
<th>Average variance extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude (ATT)</td>
<td>0.832</td>
<td>0.899</td>
<td>0.747</td>
</tr>
<tr>
<td>Counselors' Availability (AVA)</td>
<td>0.805</td>
<td>0.886</td>
<td>0.723</td>
</tr>
<tr>
<td>Effort Expectancy (EE)</td>
<td>0.847</td>
<td>0.907</td>
<td>0.764</td>
</tr>
<tr>
<td>Facilitating Conditions (FC)</td>
<td>0.743</td>
<td>0.850</td>
<td>0.654</td>
</tr>
<tr>
<td>Image Barrier (IMG)</td>
<td>0.595</td>
<td>0.783</td>
<td>0.554</td>
</tr>
<tr>
<td>Information Privacy Concern (PVCY)</td>
<td>0.933</td>
<td>0.952</td>
<td>0.832</td>
</tr>
<tr>
<td>Perceived Behavioral Control (PBC)</td>
<td>0.866</td>
<td>0.907</td>
<td>0.709</td>
</tr>
<tr>
<td>Perceived Reputation (REP)</td>
<td>0.824</td>
<td>0.881</td>
<td>0.651</td>
</tr>
<tr>
<td>Performance Expectancy (PE)</td>
<td>0.843</td>
<td>0.905</td>
<td>0.761</td>
</tr>
<tr>
<td>Security Risk (SEC)</td>
<td>0.954</td>
<td>0.969</td>
<td>0.912</td>
</tr>
<tr>
<td>Social Influence (SI)</td>
<td>0.762</td>
<td>0.862</td>
<td>0.676</td>
</tr>
<tr>
<td>Tradition Barrier (TRD)</td>
<td>0.908</td>
<td>0.943</td>
<td>0.846</td>
</tr>
<tr>
<td>Usage Barrier (USE)</td>
<td>0.686</td>
<td>0.861</td>
<td>0.756</td>
</tr>
<tr>
<td>Value Barrier (VAL)</td>
<td>0.677</td>
<td>0.860</td>
<td>0.754</td>
</tr>
</tbody>
</table>

Next, a discriminant validity test was conducted. Discriminant validity can be decided by checking if AVE value of each variable fulfills Fornell-Larcker criteria and by checking if loading value of each indicator of each variable is the highest value compared to its cross-loading value [44]. The snippet of the test result can be seen in Figure 3. For the outer model, we conducted test for coefficient of determination or R-squared (R²) which need to be equal or above 0.75 to be considered strong [44], [61]. The result showed that value of R-squared was 0.752 which is considered acceptable value as it is between 0.51 to 0.99 [61].
The groups with the most respondents were middle age groups with an income between IDR 5,200,000 to IDR 16,200,000. Therefore, multigroup analysis was conducted for each variable on the four age groups with the income groups, which were age group between 25 to 49 years old and age group of 20 to 24 years old. Like the previous result, we found that there was no difference between the groups which means that those variables were affected by gender.

Regarding experience in cyber counseling, the availability of counselors and the number of users differ. Moving on to the next moderating variable, which is income, we found that income did not moderate facilitating condition. As in previous test, we found that the data were not enough to fully conduct multigroup analysis. It yielded results that data was not distributed equally between two groups which means that those variables were affected by gender.

Last, multigroup analysis was conducted for age as moderating variables for performance expectancy, effort expectancy, social influence, and facilitating conditions. As in previous test, we found that the data were not enough to fully conduct multigroup analysis for all of groups existed. There were only two groups which we could conduct multigroup analysis out of eight groups which were age group between 25 to 49 years old and age group of 20 to 24 years old. Like the previous result, we found that there was no difference between the two groups. Therefore, we concluded that age did not moderate performance expectancy, effort expectancy, social influence, and facilitating conditions.

### Table 3 Structural Model Test Result

<table>
<thead>
<tr>
<th>Variable</th>
<th>t-statistics</th>
<th>p-value</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: PE → Behavioral Intention to use Cyber Counseling</td>
<td>3.146</td>
<td>0.001</td>
<td>Supported</td>
</tr>
<tr>
<td>H2: EE → Behavioral Intention to use Cyber Counseling</td>
<td>0.391</td>
<td>0.348</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H3: SI → Behavioral Intention to use Cyber Counseling</td>
<td>0.558</td>
<td>0.289</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H4: FC → Behavioral Intention to use Cyber Counseling</td>
<td>2.042</td>
<td>0.021</td>
<td>Supported</td>
</tr>
<tr>
<td>H5: ATT → Behavioral Intention to use Cyber Counseling</td>
<td>5.190</td>
<td>0.000</td>
<td>Supported</td>
</tr>
<tr>
<td>H6: PBC → Behavioral Intention to use Cyber Counseling</td>
<td>2.145</td>
<td>0.016</td>
<td>Supported</td>
</tr>
<tr>
<td>H7: REP → Behavioral Intention to use Cyber Counseling</td>
<td>0.309</td>
<td>0.379</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H8: PVCY → Behavioral Intention to use Cyber Counseling</td>
<td>2.037</td>
<td>0.021</td>
<td>Supported</td>
</tr>
<tr>
<td>H9: SEC → Behavioral Intention to use Cyber Counseling</td>
<td>1.770</td>
<td>0.038</td>
<td>Supported</td>
</tr>
<tr>
<td>H10: USE → Behavioral Intention to use Cyber Counseling</td>
<td>0.334</td>
<td>0.369</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H11: TRD → Behavioral Intention to use Cyber Counseling</td>
<td>1.109</td>
<td>0.134</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H12: IMG → Behavioral Intention to use Cyber Counseling</td>
<td>0.114</td>
<td>0.455</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H13: VAL → Behavioral Intention to use Cyber Counseling</td>
<td>0.644</td>
<td>0.260</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H14: AVA → Behavioral Intention to use Cyber Counseling</td>
<td>0.672</td>
<td>0.251</td>
<td>Not Supported</td>
</tr>
</tbody>
</table>

### Model Testing

For testing hypotheses as well as significance test for structural model, bootstrapping was conducted. Bootstrapping was done with a confidence interval of 95 percents, one-tailed, and 5000 subsamples [44] (Hair et al. 2011). Table 3 shows that attitude significantly affects behavioral intention to use cyber counseling with t-statistics = 5.190 and p-value = 0.000. Facilitating conditions also significantly affect cyber counseling with t-statistics = 2.042 and p-value = 0.021. Next, perceived behavioral control significantly affects behavioral intention to use cyber counseling with t-statistics = 2.145 and p-value = 0.016. Then, performance expectancy affects behavioral intention to use cyber counseling with t-statistics = 3.146 and p-value = 0.001.

For barriers, we got information privacy concern which affects behavior intention to use cyber counseling significantly with t-statistics = 2.037 and p-value = 0.021. In addition, security risk also significantly affects behavioral intention to use cyber counseling with t-statistics 1.770 and p-value = 0.038. Therefore, we can conclude that H1, H4, H5, H6, H8, and H9 were all supported while H2, H3, H7, H10, H11, H12, H13, and H14 were all not supported.

### Moderating Variables Analysis

To analyze moderating variables, multigroup analysis was conducted. Bootstrapping multigroup analysis was applied with 5% error level and a group is said to be different if p-value is smaller than 0.05 or bigger than 0.95 [62]. For gender, it is found that there was no difference between male and female for performance expectancy, effort expectancy, and social influence on behavioral intention to use cyber counseling. Surprisingly, it is found that there is difference on counselors’ availability and usage barrier between two groups which means that those variables were affected by gender.

Regarding experience in cyber counseling, the result showed that there was no difference between both groups since p-value for each variable was no more than 0.95 and no less than 0.05. It means that experience did not contribute significantly to effort expectancy, social influence, and facilitating conditions. Moving on to the next moderating variable, which is income, we found that data was not distributed equally between groups. The groups with the most respondents were the group with income between IDR 1,300,000 to IDR 5,200,000 and group with income between IDR 5,200,000 to IDR 16,200,000. Therefore, multigroup analysis was only conducted for those groups. It yielded result that there was no difference between the groups which means that income did not moderate facilitating conditions as modeled before.

Last, multigroup analysis was conducted for age as moderating variables for performance expectancy, effort expectancy, social influence, and facilitating conditions. As in previous test, we found that the data were not enough to fully conduct multigroup analysis for all of groups existed. There were only two groups which we could conduct multigroup analysis out of eight groups which were age group between 25 to 49 years old and age group of 20 to 24 years old. Like the previous result, we found that there was no difference between the two groups. Therefore, we concluded that age did not moderate performance expectancy, effort expectancy, social influence, and facilitating conditions.

---

**Table 3 Structural Model Test Result**

<table>
<thead>
<tr>
<th>Variable</th>
<th>t-statistics</th>
<th>p-value</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: PE → Behavioral Intention to use Cyber Counseling</td>
<td>3.146</td>
<td>0.001</td>
<td>Supported</td>
</tr>
<tr>
<td>H2: EE → Behavioral Intention to use Cyber Counseling</td>
<td>0.391</td>
<td>0.348</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H3: SI → Behavioral Intention to use Cyber Counseling</td>
<td>0.558</td>
<td>0.289</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H4: FC → Behavioral Intention to use Cyber Counseling</td>
<td>2.042</td>
<td>0.021</td>
<td>Supported</td>
</tr>
<tr>
<td>H5: ATT → Behavioral Intention to use Cyber Counseling</td>
<td>5.190</td>
<td>0.000</td>
<td>Supported</td>
</tr>
<tr>
<td>H6: PBC → Behavioral Intention to use Cyber Counseling</td>
<td>2.145</td>
<td>0.016</td>
<td>Supported</td>
</tr>
<tr>
<td>H7: REP → Behavioral Intention to use Cyber Counseling</td>
<td>0.309</td>
<td>0.379</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H8: PVCY → Behavioral Intention to use Cyber Counseling</td>
<td>2.037</td>
<td>0.021</td>
<td>Supported</td>
</tr>
<tr>
<td>H9: SEC → Behavioral Intention to use Cyber Counseling</td>
<td>1.770</td>
<td>0.038</td>
<td>Supported</td>
</tr>
<tr>
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</table>
VI. DISCUSSION

While some of prior research have studied on factors influencing cyber counseling, as far as we know, there is no research yet that specifically analyzed drivers and barriers on use of cyber counseling by using PLS-SEM, especially in Indonesia. Therefore, this research contributes to increasing our understanding regarding the drivers and barriers of intention to use cyber counseling. This study found that performance expectancy, facilitating conditions, attitude and perceived behavioral control were the drivers on intention to use cyber counseling while information privacy concern and security risk were proven to be the barriers of intention to use cyber counseling. These were in line with previous research, which showed that performance expectancy was a significant predictor on intention to use cyber counseling [63], [64]. Similarly, facilitating conditions were found to be common drivers [34]. In addition, such results were also found for attitude and perceived behavioral control [24], [36], [47].

In contrast to the result, past research showed that effort expectancy and social influence could significantly affect intention to use cyber counseling [34], [63], [64]. Such contrasting results were also found regarding perceived reputation [48], [51]. On the other hand, it was confirmed that information privacy concern and security risk as prominent barriers to intention to use cyber counseling according to previous research [39], [55], [56]. However, the difference in result were found on usage barrier, tradition barrier, image barrier, value barrier, and counselors’ availability where they were found to be significantly hindered intention to use cyber counseling [39], [40], [54], [58].

Based on the results, most of respondents, 120 out of 156 respondents, have no experience in using cyber counseling services. The most plausible cause might be how people in Indonesia see mental health problems. There has been a negative stigma towards mental health problems and people who suffer such illness become the victim of the stereotype. This thought is amplified since most people in Indonesia are conservative who see mental health problems as lack of faith or sign of weak mind and sharing regarding mental health problems is considered unacceptable [65]. In addition, people tend to brush off mental health problems to prevent negative judgment. This negligence, if left unchecked, may cause more severe problems which will be harder to cure. Hopefully, with the development of technology and openness of the topic among people, cyber counseling will see more usage as this study showed that people have positive attitude towards intention to use cyber counseling.

VII. CONCLUSION

In this research, examination on the drivers and barriers to intention to use cyber counseling was conducted. Several theories were adopted to create a conceptual model which was analyzed using Partial Least Square-Structural Equation Modeling. In addition, multigroup analysis was conducted to inspect moderating variables’ influence on some of variables in the model. The result showed that there were four drivers and two barriers on intention to use cyber counseling which were successfully confirmed. These results were consistent with most of prior research. However, some of the unsupported hypotheses contradicted the result of previous research.

Despite its findings, this research has some limitations. First, the data collected were not distributed equally for each category. For example, most of the respondents had income between IDR 5,200,000 to IDR 16,200,000. Such distribution made it hard to do multigroup analysis for other categories since there might not be enough samples to test each group individually. Second, this research can use more samples to increase accuracy of the model. Although the required minimum sample size was fulfilled, a higher number of samples would certainly give better results [45]. More samples would also help in doing multigroup analysis. Finally, this research was limited to investigating drivers and barriers related to behavioral intention to use cyber counseling without examining actual usage of the service. It means that we are not able to make sure if they will actually use cyber counseling since higher intention does not always translate into actual usage or what is usually called as intention-behavior gap [66].

The results of this research are mainly aimed at cyber counseling service providers. Drivers and barriers found in this research can be used as considerations in developing features in their platforms. For example, providers can provide more channels or provide channels, which are preferable by users. Improving connectivity and reliability of cyber counseling platform can also be done regarding performance expectancy as drivers. Increasing security, anonymity, and disclosing data collection can help ease anxiety in users and attract more people to use cyber counseling while journaling can help people to help track their sessions and solve their problems.

Future works can adopt the model of this research and develop it further or use different variables from other theories. By doing so, the model can be enhanced and enriched while new drivers and barriers may also be found. In addition, future studies can focus more on actual usage of cyber counseling rather than intention. This will give more insight and more accuracy regarding cyber counseling use, especially in terms of practical improvement. Another takes for the future can also focus on media or channels usage in cyber counseling. The result can help by giving specific recommendations for each different media, so the use of each media can be optimized.

REFERENCES


