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Analysis of Consumer Technology Acceptance Model on Indonesian Telemedicine Applications

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Abstract. *The digital era makes it easier for humans to cope with pandemic-related confinement, including in terms of access to healthcare. Health e-commerce facilitates consumers' access to healthcare and pharmaceuticals without having to leave the house, and startups in the health sector can contribute to economic growth and a culture of healthy living. This study gauges consumer perceptions as related to the purchase of medicines and doctor consultations online through telemedicine platforms in Indonesia. More specifically, we use the technology acceptance model to investigate how consumer perceptions on the quality, services, and products of both web- and application-based platforms influence consumer purchasing intentions for online health consultations and prescription and non-prescription medicines. Our data comprise the responses of 250 survey participants, analyzed via structural equation modeling techniques. The results show that trust can play a positive role in determining consumer intentions to purchase health consultation services or medicines through telemedicine platforms in Indonesia. Moreover, they show that 1) e-commerce telemedicine can earn greater consumer confidence via the improvement of product and service perceptions, and 2) websites and applications can ensure consumer trust via the improvement of website quality and service perceptions. The analysis of our research findings indicates that the quality of websites, applications, services, and product perceptions determine trust, and hence build consumer confidence in shopping for health products or for online consultations with competent doctors.*

Keyword: *Covid-19, digitization, consumer , start up, telemedicine*

Abstract. *Era digital memudahkan manusia ketika harus terkurung dalam pandemi Covid-19, termasuk akses kesehatan. Health e-Commerce hadir untuk memudahkan konsumen mendapatkan akses transaksi kesehatan dan obat tanpa harus keluar rumah. Secara tidak langsung, kehadiran Start-Up di bidang kesehatan memberikan kontribusi yang signifikan terhadap pertumbuhan ekonomi dan budaya hidup sehat. Penelitian ini bertujuan untuk mengetahui persepsi konsumen terhadap pembelian obat dan jasa konsultasi dokter secara online melalui platform telemedicine di Indonesia. Model penerimaan teknologi digunakan untuk menyelidiki peran kualitas web dan aplikasi, persepsi layanan dan produk pada niat konsumen untuk konsultasi kesehatan online dan pembelian obat resep dan non-resep. Sebanyak 250 responden disurvei dan data dianalisis menggunakan teknik pemodelan persamaan struktural. Hasil penelitian menunjukkan bahwa kepercayaan berperan positif dalam menentukan niat konsumen untuk menggunakan jasa konsultasi dokter atau membeli obat melalui platform Telemedicine di Indonesia. Hasil penelitian menunjukkan bahwa E-Commerce Telemedicine dapat meningkatkan kepercayaan konsumen secara signifikan dengan meningkatkan persepsi produk dan layanan, sedangkan situs web dan sistem aplikasi dapat memastikan kepercayaan konsumen dengan meningkatkan kualitas situs web dan persepsi layanan. Analisis hasil penelitian ini berarti bahwa kualitas website, sistem aplikasi, layanan, dan persepsi produk menentukan kepercayaan, dan mereka membangun kepercayaan konsumen dalam berbelanja produk kesehatan atau konsultasi online dengan dokter yang kompeten.*

Kata kunci: *Covid-19, digitalisasi, konsumen , start Up, telemedicine*

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Introduction

In Indonesia and across the world, we are living in the digital era, in which digital technologies facilitate all sorts of activities. Nearly all sectors have connected themselves to such advances, and healthcare is no exception.

Digital adaptation in the current health industry includes addressing service-related problems. Assistive technology, in the form of computer hardware and software, has driven telemedicine advances across mobile applications, or "apps" (Haleem et al., 2021). Among its innovations have been the Remote Doctor Consultation Application and Online Pharmacy Order Application, which facilitate healthcare access despite the limitations of distance between patients and doctors (Miner et al., 2021).

Telemedicine emerged from the new paradigm of mobile health, which is transforming public health services globally by making them more accessible and affordable through information technology (Chunara et al., 2021).

Telemedicine apps have been on the rise over the past few years. Since 2016, 78,000 new telemedicine applications have been added to app stores (Hartono et al., 2021). The bargain that the market has offered shows that telemedicine mobile applications experienced a strong growth up to 25% from year to year, but although the number of telemedicine mobile application is high in general, it is experiencing slow growth. The level of growth for m-health applications in app stores the previous year was at 57%; this decreased to 25% in 2017.

In 2017, the Google Play store had come to house 158,000 telemedicine mobile applications —a 50% increase over the previous year, having reached the highest level of growth across the main app stores. Meanwhile, an increase of 20% has been noted for iOS. Overall, around 325,000 registered telemedicine apps were up and running in 2017 (Shih & Portnoy, 2018).

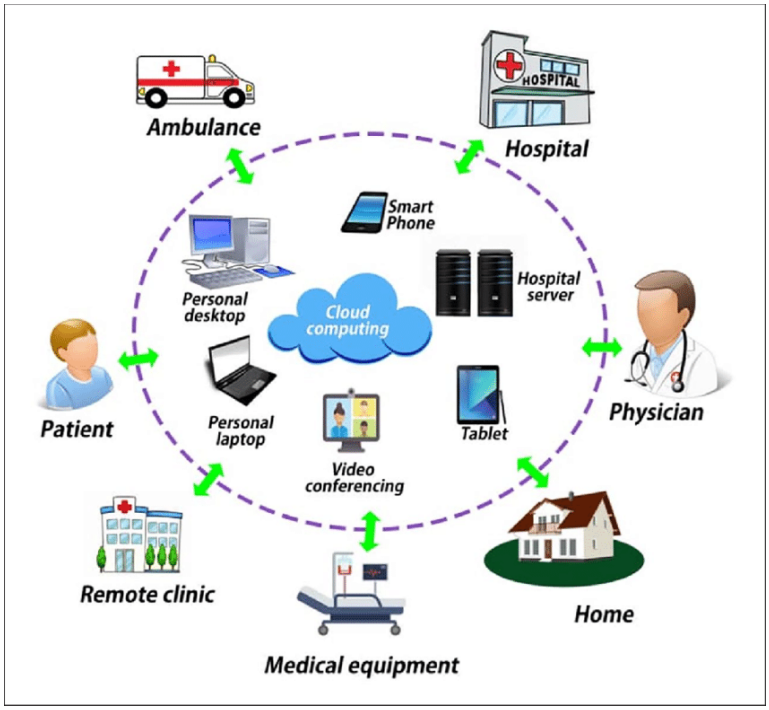

Figure 1.
The Concept of Telemedicine
Source: Kissi et al., 2020

Information and communications technology (ICT) has integrated several concepts in terms of e-health (Wicks et al., 2014), as listed below. (1) In telecare, sensors are used to detect certain dangers or gather information requiring user intervention (Son et al., 2020). (2) In telehealth, medical equipment is employed at home to manage health by detecting potential problems or to measure one's physiology index. This process incorporates a device connected to cloud computing to increase patient-centered practices and decrease costs (Monaghesh & Hajizadeh, 2020). (3) Finally, telemedicine, or teleconsultation, is defined as the procurement of health services via audio-visual connection, virtual house calls, specialist consultations at healthcare facilities for remote patients, and pre-recorded remote specialist visits for patient observation (Flumignan et al., 2019). Thus, these telemedicine services enable healthcare professionals to monitor, diagnose, and offer medical treatment remotely with the use of communications technology '(Ning et al., 2021).

M-health and telemedicine technology can be adopted as a low-cost alternative to access service providers and health system information —(Sheikh et al., 2021). The combination of the two into mobile apps can create practical and easy-to-use health services. The present study hence focuses on telemedicine mobile apps.

In Indonesia, increased Internet use is bound to lead to a rise in telemedicine services involving health experts.

Halodoc and Alodokter are among the most used telemedicine applications offering online consultation services in Indonesia. The two have been ranked in the top five in the medical category on the Apple App Store and Google Play (Machmud et al., 2020).

Halodoc is an Indonesian technology company in the health teleconsultation sector. It was established in 2016 in Jakarta by Jonathan Sudharta. Halodoc users can talk with medical staff, purchase medicines, and run laboratorial tests via their smartphones anytime, anywhere. Halodoc's stated aim is to simplify healthcare services and facilitate access to such services for all citizens of Indonesia (Halodoc.com, 2020). Currently, Halodoc has more than two million active users, 22,000 active doctors, and 1,200 pharmacies available for receiving prescriptions (Tarmidi, 2021).

Alodokter is a renowned digital health company in Indonesia, providing services for more than 18 million monthly active users. Founded in 2014, Alodokter has made a significant impact on the Indonesian healthcare sector, supplying its users with easy-to-understand, accurate, and readily accessible health information. All of this information is gathered by a team of Indonesian medical doctors (Fidowaty; Engwin, 2021).

Apart from these two telemedicine mobile apps, the platform GrabHealth provides online health consultations in Indonesia. The GrabHealth app was launched in 2019 by the technology-based health service provider Good Doctor Technology Indonesia, in a partnership with Grab, a renowned all-in-one application in Southeast Asia; the latter aimed to offer a complete in-platform digital health solution via the GrabHealth feature (Setyawan et al., 2021).

Indonesia increased between 2019 and March 2020, as shown in Figure 1.2. Halodoc's user base grew by 101%, and Alodokter's by 39%. This has been influenced by the COVID-19 pandemic (Demaerschalk et al., 2021).

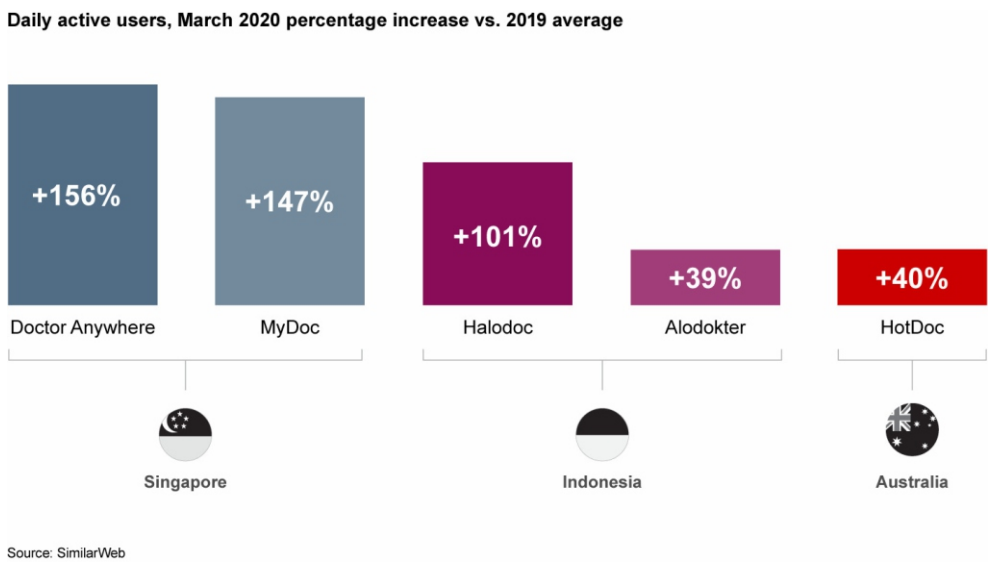

Figure 2.
The Number of Telemedicine Users in the Asia-Pacific Region

The coronavirus—or COVID-19—pandemic pertains to the worldwide spread of the disease caused by the virus SARS-nCoV-2. From the start, the World Health Organization (WHO) has closely monitored this virus due to its effects and rapid spread. The WHO categorized COVID-19 as a pandemic on 11 March 2020 (Tsang et al., 2021), and it has since come to greatly affect sectors across society, including healthcare, the economy, and security. One of the effects of COVID-19 has been a spike in the demand for healthcare products and services on a global scale, observed also specifically at the national level in Indonesia (Albahri et al., 2021).

In a study conducted in New York, in the United States of America, between 2 March and 14 April 2020, healthcare provision through telemedicine increased from 369.1 to 866.8 daily (a 135% increase), to tackle the COVID-19 pandemic by expanding the virtual healthcare system; for cases not as urgent, a 4245% increase was reported, namely from 94.7 to 369.1 daily (Jumreornvong et al., 2020).

These findings indicate that, while the growth of telemedicine applications' user base appeared to stagnate earlier, the COVID-19 pandemic prompted a drastic increase in traffic (Bashshur et al., 2020).

Based on data from Google Trends, searches for "Halodoc" (red) and "Alodokter" (blue) increased during June–July 2021, peaking before and during the imposed social-distancing restrictions for the period of 28 June–11 July 2021 in Indonesia. Most of the searches came from East Nusa Tenggara Province, DKI Jakarta, DI Yogyakarta, and Central Kalimantan (Google, 2021). The increase in search on some telemedicine mobile applications during the pandemic can increase the possibility of interest from user on telemedicine mobile applications.

Most of the products on telemedicine platforms are categorized as "services." A major aspect missing from these online services is the offline healthcare sector's ability to provide consumers with direct medical check-ups. However, the interactive and synergic characteristics of web-based platforms and apps offer many choices to boost consumer behavior in maximizing the use of services or products. One example relates to the provision of product details and multi-attribute comparisons for prescribed medicines, which tends to lower the cost of buyers' search (Bahl et al., 2020).

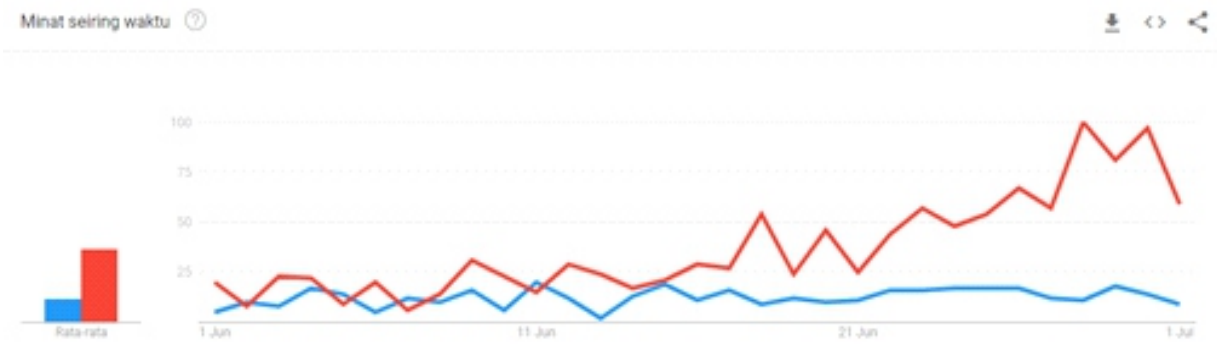

Figure 3.
Increase in Search Traffic
Source: Google, 2021

Implementation of information technology is closely linked with user acceptance, perhaps especially in crucial sectors such as healthcare. Gauging the extent of users' acceptance and understanding of the technology is essential to its implementation. In light of this, research ought to assess user-acceptance factors in relation to telemedicine apps.

Research Objectives and Significance

This study aims to measure consumer acceptance of telemedicine. It considers the number of users under the influence of trust mediation, according to the technology acceptance model and three other highly pertinent constructions: product perception (PP), service perception (SP), and the quality of web/application (WQ). The purpose is to help gather knowledge on consumers' purchase behavior and make suggestions as to how telemedicine parties could ensure their business strategies would 1) be in line with consumers' attributes and behavior and 2) capture consumers' attention toward making repeat orders. The results will also contribute to the literature on technology acceptance with insights on the telemedicine context.

Theoretical Framework

Consumer behavior is a result of values, motives, and attitudes. It may be realized in consumption or purchase behavior. Shopping motives can be classified as hedonic or utilitarian (Hasnah et al., 2021; Musqari & Huda, 2018).

Hedonic utility is the experience of a product through taste, sound, smell, tactile effect, and visual image (Fernandez-Ruano et al.,2022; Scarpo, 2021). Conversely, the utilitarian consumption of a product is more cognitively driven and goal- and instrument-oriented (used for functional work). Hedonic and utilitarian values are often at the epicenter of attention and inspection (Scarpi, 2020).

The technology acceptance model (TAM) used in the present research emphasizes several types of behaviors, as well as psychological elements which can positively or negatively influence behavior (intention and attitude). TAM (Kamal et al., 2020) has developed into a method cited by many in predicting and explaining uses of information technology (IT), alongside users' behavior.

The origin of TAM is linked with the theory of reasoned action (TRA) '(Ajzen, 1991). TRA is adopted to evaluate individuals' behavioral changes as premised upon their attitudes and intentions pre-dating the action. TRA implies that users' decision to accept new IT depends on two rational values: perceived usefulness (PU) and perceived ease of use (PEOU). PU, in short, is defined as how much users expect the new system use to result in better performance outcomes; and PEOU as how easy to use they believe a certain system will be –(Liu et al., 2010; Suparman, 2019).

Product perception (PP) is often influenced by consumers' assessment framework and pre-conceptions about product properties. If the pre-constructed ideas involve what product it is, they are referred to as perceptual expectation, analytical expectation, or "product trust" (Schifferstein, 2001; Tarhini et al., 2017).

Service perception (SP) pertains to consumers' impressions of a brand, product, and service, and quality of product to consumers' perceptions regarding, for instance, an application, their feelings toward an application, or their direct or indirect experience with someone '(Laroche et al., 2018; Tampubolon et al., 2021). Web/application quality (WQ) relates to consumers' perceptions on reliability, use, security, availability, scalability, maintenance, and the time to market the application (Olsina et al., 2009).

Perceived usefulness (PU), as defined by Davis (1986), comprises users' subjective perceptions, i.e., their belief that the use of a certain technology can increase their work performance (Tahar et al., 2020). Perceived Ease of Use (PEOU) is defined as "how far someone believes that the use of a certain system will free them from effort". It is also about the use that they experience, the ease that they feel, and the acceptance of information technology (He et al., 2018; Woru et al., 2021).

Trust in the context of technology acceptance is a subjective probability: Users trust that such infrastructure will facilitate transactions as expected (Kuntoro et al., 2019; McKnight et al., 2009). Attitude and intention to use pertain to the desires and attitudes of users toward adopting the technology in the future. This research incorporates intention to use the technology as a result variable due to its being identified as a reliable predictor of technology use (Teo & Zhou, 2014).

Researchers on information system (IS) have investigated, examined, and replicated these two factors and their validity in predicting acceptance in a variety of IT modalities. The original (PU and PEOU) TAM variable (Davis, 1989) is not enough to capture it. The key is the trust influencing consumer behavior in adopting e-commerce for their purchases.

Expanded research on TAM has added variables such as the perception of pleasure, social character, and beliefs (Tung et al., 2008). Other variables added include personal characteristics (e.g., sex, age, income, culture, education); normative beliefs; Internet experience; shopping tendency; system quality; security; psychological perception (e.g., utility and risk perception); availability; service quality; attitude; and online shopping experience.

Research Methodology

This study has been designed to employ a quantitative survey to collect data to examine factors based on the variables of consumer intention and behavior in using a telemedicine app. The questionnaire was distributed through Google Forms via the convenience sampling method, classified as non-probability sampling.

Measurement of all statements contained in the questionnaire sent to respondents was based on the Likert scale, with an interval of 1 (lowest score) to 5 (highest score). We analyzed the data through structural equation modeling (SEM) with the SmartPLS program.

SEM is a data analysis method often used to test a causal linear model. SEM-PLS is a structural equation modeling method enabling researchers to estimate causal relationships with latent variables. It has gained attention in research and practice in various fields, such as management, marketing, system information, medicine, engineering, psychology, political science, and environmental science.

Researchers can use SEM-PLS to model and predict complex cause-effect relationship models with two latent variables (graphically represented by a circle) and the examined variable (graphically represented by a rectangle). A latent variable creates a phenomenon that cannot be examined (or measured directly), such as perception, attitude, and intention. The examined variable (such as responses to the questionnaire or secondary data) is used to represent the latent variable in a statistical model. SEM-PLS predicts the relations between latent variables and decides how good the model is at explaining the targeted construction. The main reason for the surge in the popularity of SEM-PLS is its ability to predict complex models, and uncomplicated data requirements (Peng & Lai, 2012; Pesak et al., 2019; Yunanto & Utami, 2017)

Results and Discussion

A. Respondent Characteristics

A total of 250 respondents were sampled from Java, Bali, Nusa Tenggara, Sumatra, Kalimantan, Sulawesi, and Papua. This study did not limit the area of research in Indonesia, or impose restrictions on gender or age. However, out of 456 respondents, most of them came from the islands of Java, Sumatra, and Kalimantan. Most of the respondents in this study were women, at 121 respondents or 52%, although it differed slightly from the number of female respondents, namely 48% of the total respondents. Teenagers and adults were predominant in the sample.

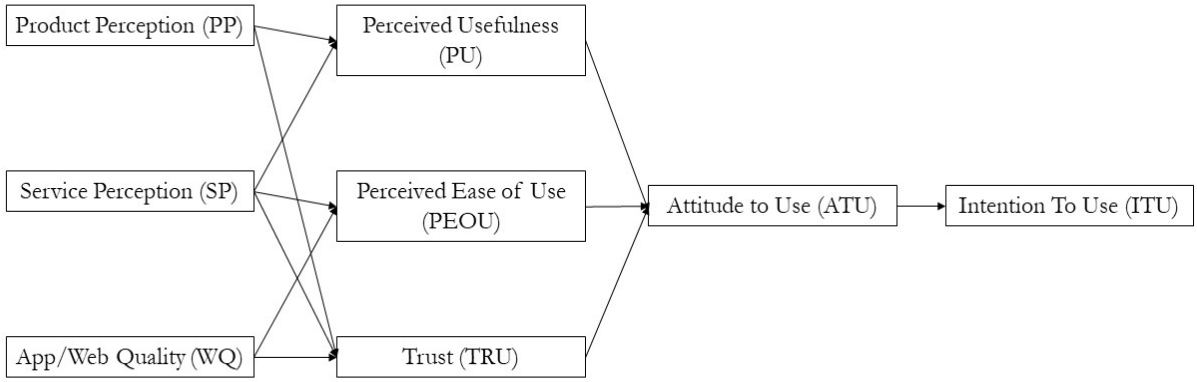

Figure 4.
Research Model
Source: Author

Table 1.
Category of Respondents

Characteristics	Frequency	Percentage (%)
Gender		
Male	121	52%
Female	129	48%
Age		
18 – 27 years old	74	30%
28 – 37 years old	121	48%
38 – 47 years old	35	14%
>50 years old	20	8%
Research Area		
Java	96	38%
Sumatera	63	25%
Kalimantan	36	15%
Bali & Nusa Tenggara	21	8%
Sulawesi	14	6%
Maluku & North Maluku	13	5%
Papua	7	3%

B. Uji Validitas dan Reliabilitas

Table 2.
Convergent Validity

Variable	Indicator	Loading factor
Product perception (PP)	The products offered (including medicines) are at competitive prices.	0.928
	It is difficult to determine the quality of products (including medicines) offered online.	0.934
	A wide variety of products offered (including medicines and insurance) are available online.	0.794
Service perception (SP)	Doctors who serve telemedicine consultations are highly competent.	0.912
	The doctors' responses are swift.	0.895
	Medicine delivery is rapid.	0.861
Web/application quality (WQ)	The appearance of the website is captivating.	0.943
	The application's connectivity speed is excellent.	0.862
	The application's menu is easily understood.	0.878
	Useful descriptions of the product are available on the telemedicine application.	0.775
Trust (TRU)	Privacy affects my decision to use the telemedicine application.	0.734
	The telemedicine application's security system influences my decision to use the application.	0.920
	The transparency of doctors' identities and service reviews encourage me to use the telemedicine application.	0.938
	The ease of transaction payment for the application affects my decision to use the telemedicine application.	0.929

Table 2. (Continued)
Convergent Validity

Variable	Indicator	Loading factor
Perceived ease of use (PEOU)	It is effortless to register on the telemedicine application.	0.966
	It is effortless to choose a doctor who will treat patients.	0.897
	It is effortless to buy medicine prescribed by a doctor.	0.911
	The selection of insurance products is simple.	0.943
Perceived usefulness (PU)	The cost of consulting a doctor through the telemedicine application is cheaper.	0.930
	The telemedicine application saves me time in obtaining healthcare access (including medicines and health insurance).	0.953
	It takes less effort to access health services through the telemedicine a pplication.	0.886
Attitude to use (ATU)	It is better to obtain health consultations during the COVID -19 pandemic through the telemedicine application.	0.885
	Using a telemedicine application to obtain health consultations is wise during the COVID -19 pandemic.	0.953
	It is interesting to get healthcare access through the telemedicine application.	0.874
Intention to use (ITU)	I will use the telemedicine applica tion to get healthcare access in the future.	0.897
	I will recommend the telemedicine application to my colleagues.	0.956
	I will continue to use the telemedicine application.	0.873

Based on the table above, it can be seen that the loading factor value for each indicator is > 0.7, and that the convergent validity test has therefore been fulfilled.

Table 3.
Construct Validity and Reliability

	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
Product perception	0.867	0.917	0.788
Service perception	0.868	0.919	0.792
App quality	0.888	0.923	0.751
Perceived usefulness	0.913	0.945	0.853
Perceived convenience	0.947	0.962	0.864
Trust	0.909	0.934	0.782
Attitude to use	0.888	0.931	0.818
Intention to use	0.895	0.935	0.827

Validity and construct reliability testing for this research model was also realized through Cronbach's alpha, composite reliability, and average variant extracted value (AVE). The latter describes the amount of variance the construct can capture compared to the variance caused by measurement errors. The results of all AVE scores in Table 3 have a value greater than 0.5, signifying the sufficient convergent validity of the construct used (Sarstedt et al., 2019).

Composite reliability gauges the consistency of the research model construct, based on the indicator poles in each variable with a minimum value of 0.7 (J. Hair et al., 2017). The test results in Table 3 show that all variables have sufficient reliability, which can also be inferred from the Cronbach's alpha value with a threshold of 0.7, according to the SEM PLS construct rules in Hair et al. (2017). This research variable has fulfilled the latter based on the results of the measurement in the outer model test (Table 3).

Table 4.
Discriminant Validity (Fornell-Larcker Criterion)

	PU	PEOU	TRU	WQ	ITU	SP	PP	ATU
Utility	**0.923**							
Convenience	0.712	**0.930**						
Trust	0.404	0.662	**0.884**					
Web/app quality	0.648	0.853	0.708	**0.866**				
Intention	0.709	0.671	0.458	0.715	**0.909**			
Service perception	0.647	0.794	0.627	0.733	0.672	**0.890**		
Product perception	0.389	0.469	0.483	0.392	0.357	0.356	**0.888**	
Attitude	0.767	0.678	0.484	0.585	0.791	0.763	0.361	**0.905**

According to the results of the calculation for discriminant validity via the Fornell-Larcker criterion, the root value of the AVE for each variable is greater than the correlation of other variables. This means the perceived usefulness value (0.923) diagonally in the perceived usefulness column is greater than the other variables. Therefore, the discriminant validity conditions with the Fornell-Larcker Criterion have been met.

As tables 3 and 4 demonstrate, this research has been found to meet validity as well as reliability requirements. This enabled us to continue on to the hypothesis-testing stage through the inner model structural test.

B. Structural Model Evaluation (Inner Model)
A test of the structural model or inner model aims to determine the relationship among constructs, significance value, R-square (R2), Q-square predictive relevance (Q2), and f-square effect size (f2) from the research model. The structural model is evaluated using R-square (R2) for the dependent variable and the path coefficient value for the independent variable '"(Hair et al., 2019).

The structural model analysis in this study adopts the bootstrapping technique in SmartPLS 3.3, with a significance level of 0.05. In two-tailed hypothesis testing, the t-statistic must be above 1.96 (Peng & Lai, 2012). The inner structural model shows a significant value in testing the relationship among variables through bootstrapping. The following are the results of the bootstrapping calculations for each variable in the structural model.

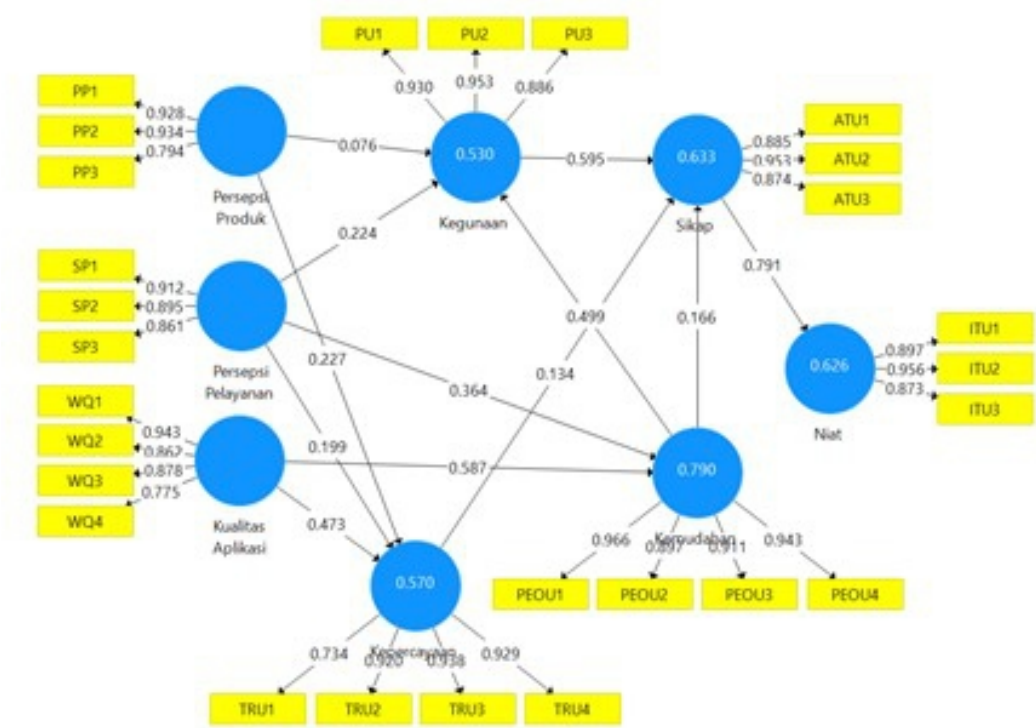

Figure 5
Standardized Model Full

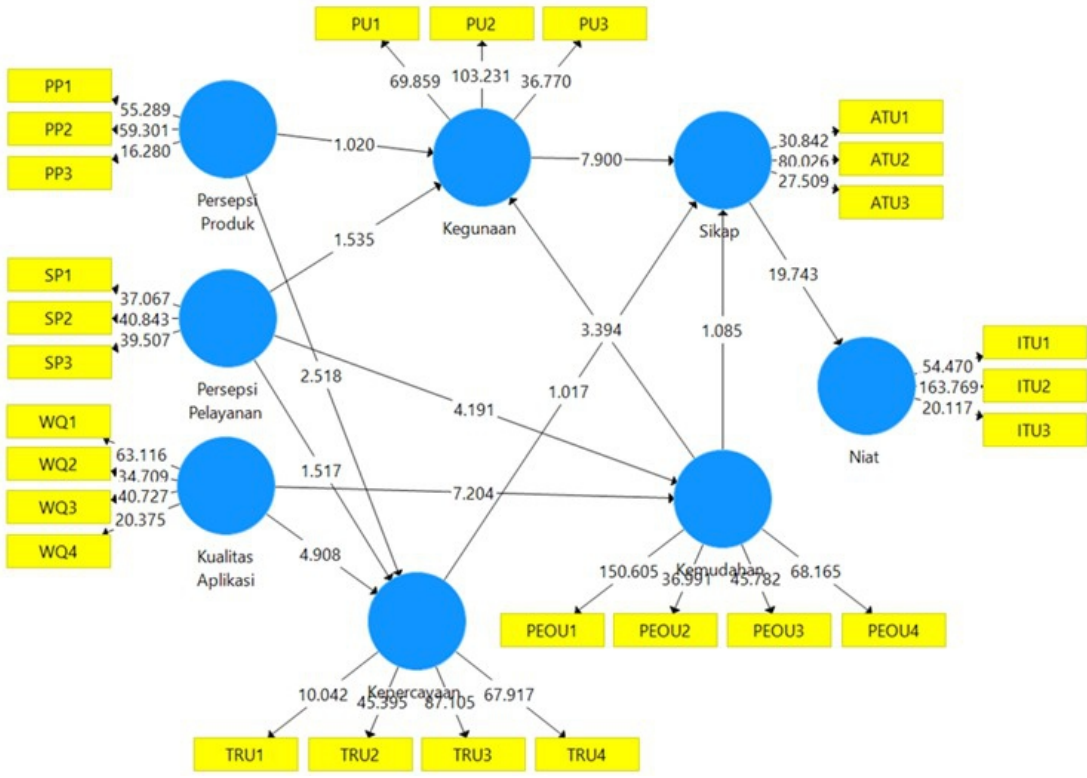

Figure 6
Bootstrapping

Internal model testing (inner model) is the development of a conceptual and theory-based model to analyze the relationship between exogenous and endogenous variables described in the conceptual framework. Structural model testing (inner model) is conducted in the following stages:

1. R-Square Value

Table 5
R-Square Value

	R Square	Criterion
Perceived usefulness	0.530	Moderate
Perceived convenience	0.790	Substantial
Trust	0.570	Moderate
Attitude To Use	0.633	Moderate
Intention To Use	0.626	Moderate

Table 4 shows that the R-square value of perceived usefulness is 0.5308. It can be interpreted that perceived usefulness is explained by 43.8% by the variability of product perception and service perception constructs. Furthermore, the R-square value of perceived convenience is 0.790. It can be interpreted that the perceived convenience is explained by 79% by the variability of the service perception construct and the web/application quality. The R-square value of trust is 0.570. It can be interpreted that trust is explained by 42.2% by the variability of the constructs of product perception, service perception, and web/application quality. The R-square value of attitude to use is 0.633. It can be interpreted that the attitude to use is explained by 63.4% by the variability of the constructs of perceived usefulness and trust. Finally, the intention to use has an R-square value of 0.626. It can be interpreted that the intention to use is explained by 62.6% by the variability of the attitude-to-use construct.

3. F-Square Evaluation

The f-square value assesses whether there is a significant relationship between variables; therefore, a researcher should also assess the magnitude of the influence between variables.

The following is the influence measure of f^2:

- The f^2 value of 0.02–0.14 is included in the category of small influence of latent predictor variables (exogenous latent variables) at the structural level.
- The f^2 value of 0.15–0.34 is included in the category of medium influence of latent predictor variables (exogenous latent variables) at the structural level-
- The f^2 value of $\geq$ 0.35 is included in the category of large influence of latent predictor variables (exogenous latent variables) at the structural level.

Table 6
F-Square Value

Pathway	F square	Effect size
Product perception – perceived usefulness	0.009	Small
Product perception – trust	0.100	Small
Service perception – perceived usefulness	0.039	Small
Service perception – perceived convenience	0.291	Medium

Table 6. (Continued)
F-Square Value

Pathway	F square	Effect size
Service perception – trust	0.042	Small
Web/app quality – perceived convenience	0.757	Large
Web/app quality – trust	0.231	Medium
Perceived convenience – perceived usefulness	0.175	Medium
Perceived usefulness – attitude to use	0.468	Large
Perceived convenience – attitude to use	0.024	Small
Trust – attitude to use	0.027	Small
Attitude to use – intention to use	1.670	Large

As seen in the table above, for our sample, web platform/app quality strongly influenced perceived convenience. Moreover, perceived usefulness strongly influenced attitude to use, as did attitude to use toward intention to use. This is because the f-square value of the three relationships has a value > 0.35. Service perception had a moderate influence toward perceived convenience; the same can be said for web platform/app quality toward trust and perceived convenience toward perceived usefulness. This is due to the f-square value of the three relationships having a value range of 0.15–0.34. Product perception and service perception were shown, respectively, to have a weak influence on both perceived usefulness and trust. Finally, both trust and perceived convenience had a weak effect on attitude to use. Here, the f-square value of the six relationships has a value range of 0.02–0.14.

4. Model Fit

SRMR is a standardized average index between the observed correlation matrix and hypothesis matrix. For the model to meet the criteria, the SRMR value must be less than 0.8. An SRMR value of 0.098 < 0.8 means that the model fit criteria have been met.

5. Hypothesis Test

The hypothesis test was conducted based on Path PLS Analysis testing with the bootstrapping procedure. The hypothesis criteria are accepted at 0.05 (5%) = 1.96 and/or p-value below 0.05. The following are the statistical estimation results.

Table 7.
PLS-Path Hypothesis Test Result

	Original sample (O)	Sample mean (M)	t-statistic (|O/STDEV|)	P-value	Decision
H1: Product perception→utility	0.076	0.077	1.020	0.308	Rejected
H2: Product perception→trust	0.227	0.228	2.518	0.012	Accepted
H3: Service perception→utility	0.224	0.232	1.535	0.125	Rejected
H4: Service perception→convenience	0.364	0.367	4.191	0.000	Accepted

Table 7. (Continued)
PLS-Path Hypothesis Test Result

	Original sample (O)	Sample mean (M)	t-statistic (|O/STDEV|)	P-value	Decision
H1: Service perception→trust	0.199	0.205	1.517	0.130	Rejected
H2: Web/app quality→convenience	0.587	0.582	7.204	0.000	Accepted
H3: Web/app quality→trust	0.473	0.468	4.908	0.000	Accepted
H4: Convenience→utility	0.499	0.490	3.394	0.001	Accepted
H5: Utility→ attitude	0.595	0.597	7.900	0.000	Accepted
H10: Convenience →attitude	0.166	0.153	1.085	0.279	Rejected
H11: Trust →attitude	0.134	0.145	1.017	0.309	Rejected
H12: Attitude →intention	0.791	0.792	19.743	0.000	Accepted

Source: Processed data, 2021

Based on the table above, the p-value of the product's perception of perceived usefulness is 0.308 > 0.05, and the t-value is 1.020 < 1.96. This means that hypothesis 1, stating the effect of product perception on perceived usefulness, is rejected. This is in contrast to Hu et al. (1999), whose research shows the effect of telemedicine products' perception on the perceived usefulness of the application's customers.

The p-value of product perception on trust is 0.012 < 0.05, and the t-value is 2.518 > 1.96. This means that hypothesis 2, stating the effect of product perception on trust, is accepted. This is in line with the results from Kamal et al. (2020) demonstrating a significant relationship between the perception of telemedicine products on a person's trust in telemedicine applications. This indicates that the more the consumer knows and understands the features and products on a telemedicine application, the higher the level of consumer confidence.

The P-value of service perception on perceived usefulness is 0.125 > 0.05 and the t-value is 1.535 < 1.96. This means hypothesis 3, stating the effect of service perception on perceived usefulness, is rejected. This is in line with (Kissi et al., 2020) research results which state that there is no significant relationship between service perception by consumers and the perceived usefulness of telemedicine consumers.

The p-value of service perception toward perceived convenience is 0.000 < 0.05 and the t-value is 4.191 > 1.96. This means that hypothesis 4, stating the effect of service perception on perceived convenience, is accepted. This concurs with –'–'Bagot et al. (2020), whose findings point to a significant relationship between service perceptions and perceived convenience. One can thus assume that the better the service systems in the application are, both indirectly (as artificial intelligence) and directly (comprehended by consumers), the higher consumers' sense of convenience is likely to be.

The p-value of service perception on trust is 0.130 > 0.05 and the t-value is 1.517 < 1.96. This means that hypothesis 5, stating the effect of service perception on trust, is rejected. This differs from the results of Kamal et al. (2020), which draw a significant relationship between service perception and trust.

The p-value of application quality to perceived convenience is 0.000 < 0.05 and the t-value is 7.204 > 1.96. This means that hypothesis 6,

stating the effect of web platform/application quality on perceived convenience, is accepted. This is in agreement with Chunara et al. (2021), whose study finds a significant relationship between application quality and perceived convenience. Hence, the higher the quality of the application's operational system is, the more likely consumers will be to feel at ease using telemedicine applications.

The p-value of web platform/application quality to trust is 0.000 < 0.05, and the t-value is 4.908 > 1.96. This means hypothesis 7, stating the effect of application quality on trust, is accepted. This hypothesis aligns with Pierce (2021), who demonstrates the effects of application quality on trust. This shows that good quality and seamlessly organized applications are likely to boost consumers' confidence in telemedicine applications.

The p-value of perceived ease of perceived usefulness is 0.001 < 0.05 and the t-value is 3.394 > 1.96. This means hypothesis 8, stating the effect of perceived convenience on perceived usefulness, is accepted. These results are in line with those from Cheng et al. (2021) showing a positive relationship between perceived convenience and perceived usefulness. Therefore, the ease consumers feel in using telemedicine applications is likely also beneficial for the application in the eyes of consumers.

The p-value of the perceived usefulness of the attitude to use is 0.000 < 0.05, and the t-value is 7.900 > 1.96. This means that hypothesis 9, maintaining that perceived usefulness affects attitudes to use, is accepted. It concurs with findings by Althumairi (2021) on a positive relationship between perceived usefulness and attitudes to use. This hypothesis is closely related to humans' self-evident attitude to use goods considered useful.

The p-value of perceived ease of use is 0.279 > 0.05 and the t-value is 1.085 < 1.96. This means that hypothesis 10, stating the effect of perceived ease of use on attitudes to use, is rejected. This hypothesis contradicts results from Abdool et al. (2021), which draw a relationship between perceived convenience and attitudes to use in telemedicine apps.

The p-value of the attitude to use toward the intention to use was 0.309 > 0.05, and the t-value was 1.017 < 1.96. This means hypothesis 11, regarding the effect of attitude to use on intention to use, is rejected. This hypothesis is also not in line with findings by "'Abdool et al. (2021) drawing a relationship between attitudes to use and intentions to use in telemedicine apps.

The p-value of the belief in the attitude to use is 0.000 <0.05, and the t-value is 19.743 > 1.96. This means that hypothesis 12, on the effect of trust on attitudes to use, is rejected. This hypothesis is, once again, not in line with the conclusions from "'Abdool et al. (2021), identifying a relationship between attitudes to use and intentions to use in telemedicine apps.

Conclusion

We conclude in our study that product perception influenced consumer confidence when using telemedicine applications. In addition, service perception had an effect on consumers' sense of convenience while using the apps. The influence on the quality of telemedicine applications can be felt by users. App quality was also found to affect consumers' trust in using the app.

The perceived convenience affects the perceived usefulness of consumers when using the Telemedicine Application, and the perceived usefulness affects the attitude toward using the application.

We recommend that telemedicine apps strengthen their capacity as a comprehensive avenue for greater access to healthcare in Indonesia and as pioneers in the acceleration of startups in the country's health sector. In addition, telemedicine startup companies should pay special attention to consumer data protection.

It is necessary to improve telemedicine application design to make it easier and more attractive toward further capturing users' interest. The COVID-19 pandemic is an opportunity for telemedicine applications to sharpen the quality of their online health consultation services, especially for community members experiencing health problems that are less serious and require immediate medical treatment.

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