Modernized business: Live streaming feature adoption impact on business competitive advantage of Indonesia's Gen Z perceptions

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Abstract: Technological developments will continue to shape the future, specifically in modernizing the business sector. Therefore, this study explores how the use of live streaming features affects Generation Z's perception of a company's competitive advantage. This research analyzes data collected through surveys consisting of 210 Gen Z respondents who use live streaming features. The Unified Theory of Acceptance and Use of Technology (UTAUT) model was used to assess the factors that influence the usage of live streaming features. The results showed that Performance Expectancy and Facilitating Conditions contribute significantly to Gen Z participation in using the live streaming features. In other conditions, Effort Expectancy and Social Influence do not actively impact the user's decision to use the feature. This result confirms that usability and ease of use encourage user engagement in live streaming features, while perceived benefits and social influence do not have a strong effect in encouraging the use of the feature. Therefore, businesses in Indonesia can optimize their competitive advantage by utilizing the live streaming feature to increase interactive experiences and ensure strong facility support, such as technology reliability and creating more engaging content to boost user participation and loyalty.

Keywords: Modernized business; Live streaming feature; UTAUT Model; Gen Z perception; Business competitive advantage.

1. Introduction

Increasingly rapid technological innovation has driven the alteration from conventional technology to a modern digital technology [1]. Technological progress has reached the stage where the use of technology has penetrated various aspects of life. This can be seen from how technology is also integrated to support education [2] and how technology like the Internet of Things (IoT) supports activities of daily living [3]. Social media is also one of the products of the rapid development of digital technology. Even social media, which was originally just social media, has also become a place where people, especially young people can express their creativity.

Technological developments have also reached the stage where the emergence of social media trends is influencing the impulsive behavior of Generation Z in choosing a product to buy [4]. According to data released by the BPS [5] in 2020, there are 71.50 million Gen Z in Indonesia. The lifestyles of each generation are clearly different. Gen Z is known and can be said to have grown up on the internet by spending a lot of time enjoying social media content. In fact, much of the content they see can bring inspiration to them [6]. This feature will undoubtedly open up new opportunities in the e-commerce business since the platform is able to reach audiences such as Gen Z, who majority of them spend their time scrolling through social media [7].

The Indonesian micro, small and medium enterprises (MSMEs) can take advantage of this momentum, considering the large potential for them to sell their products through e-commerce for the Gen Z market. MSMEs is one of the business groups that has a high contribution to Indonesia's

economy. This particular group contributes as much as 60,51% to the growth portion of Indonesia's Gross Domestic Product (GDP). According to data from Kementerian Koordinator Bidang Perekonomian Republik Indonesia [8] there are 66 million MSMEs in Indonesia, making about 99% of all business entities. This means that MSMEs play a crucial role in driving Indonesia's economy.

With the rapid development of technology, MSMEs get the opportunity in transforming business models and opportunities to increase product sales value [9]. However, in Indonesia itself, businesses that utilize e-commerce platforms in 2022 to early 2023 is only 37.46% and the rest of 62.54% are non-eCommerce businesses. Of course, this shows that there are still a few businesses that have transformed into utilizing e-commerce platforms. One evidence of technology developments that continues to develop today is the live streaming feature. Live streaming is a real time video-based communication feature where viewers can ask questions and interact directly with the live streaming host [10]. Live streaming features have a significant impact in changing people's behavior in everyday life, especially in shopping [11, 12]. This can be seen from how the live streaming feature becomes a medium that is not only used for real time video content, but this feature can be utilized in supporting trade or business activities, especially in e-commerce platforms [1].

According to the Information and Communication Technology (ICT) evolution of technology usage in Indonesia, the Covid-19 epidemic has caused a notable rise in the country's rate of technology use. It is estimated that 215.6 million Indonesians would be using technology by 2023. [13]. However, the uneven distribution of technology use in Indonesia is regrettably still present [14]. Just 19.75% of business owners use a marketplace or e-commerce platform to manage their companies, making the use of e-commerce platforms by business owners remains comparatively low. Data from 2022 showed that Indonesia had 2,995,986 e-commerce companies [15].

MSMEs hold a significant role in Indonesian economic growth. The presence of MSMEs opens up many job opportunities which increase the country's GDP. This also stimulates the development of new entrepreneurship [16]. On the other hand, many are still not aware of the potential that technology adoption can encourage their business competitive advantage. The relatively low technology adoption in Indonesian MSMEs is due to the lack of demand for technology usage in the process of business. This happens due to the lack of infrastructure and facilities, lack of knowledge and technological skills, higher cost, reluctance in using more advanced technology, and lack of financial incentive provided for MSMEs [17]. The lack of technology adoption by MSMEs in Indonesia is unfortunate because technology provides many benefits in helping businesses.

Live streaming features itself creates various benefits for business owners in modernizing their business and boost competitive advantage. Live Streaming is an online medium that enables more interactive communication between the streamer and audience in real-time [10]. Live streaming will feature streamers through live video and there also chat or comment feature that allow streamers and audience to communicate via chat in real-time [18]. During the live broadcast, the broadcaster will deliver information related to the topic or product being discussed supported by the audience asking questions in real-time through the chat column. This will be followed by real-time information delivery by the streamer in response to the audience's information and questions through real-time chat. Interactivity that is enabled through live streaming features can increase customer engagement thus affecting the competitive advantage of business [19, 20].

This research aims to understand Gen Z perspective regarding the perception of live streaming utilisation in impacting business competitive advantage on e-commerce. Apparently, there are many MSMEs not utilizing and maximizing the use of technology to further encourage their business competitive advantage. This is very unfortunate, considering the potential of MSMEs in Indonesia which are quite large contributors to Indonesia' GDP. The Unified Theory of Acceptance and Use of Technology (UTAUT) serves as the framework for this study, which aims to comprehend how Gen Z views the use of live streaming in business. Each acceptance factors' significance of using live streaming

features for MSMEs will be determined. Therefore, we ask: Does the adoption of live streaming features' Performance Expectancy (PE) factor significantly impact Indonesian MSMEs' capability to compete in the market? Does the adoption of live streaming features' Effort Expectancy (EE) factor significantly impact Indonesian MSME's ability to compete in the market? Does the adoption of live streaming features' Social Influence (SI) factor significantly impact Indonesian MSME's ability to compete in the market? Lastly, Does the adoption of live streaming features' Facilitating Condition (FC) factor significantly impact Indonesian MSME's ability to compete in the market? The UTAUT model is used to measure acceptance in utilizing information technology, in this case the live streaming feature as information technology [21].

2. Literature Review and Hypothesis Development

2.1. Business Competitive Advantage

Business competition is a situation where there are two or more companies competing to achieve the same goal of increasing market share and required resources. Therefore, it is very important for business owners to have a competitive strategy to compete with business competitors in the same industry [22]. Increasingly fierce business competition inevitably encourages business owners to ensure the sustainability of their business by creating strategies to overcome the competition in the market [23]. High-quality human resources, high levels of motivation and creativity, productivity, the discovery of new ideas or innovations, effective management systems and corporate structures, a broad perspective of the product and the surrounding environment, and the capacity to rival in the worldwide market are some of the elements that affect the attainment of business competitive advantage [23].

There are several indicators in providing business competitive advantage, namely: Price / cost, Quality, delivery dependability, Product Innovation, Time to Market [24]. Price is one of the important components in competitive business, where some people will tend to buy cheaper goods. Second, quality is no less important than price and even the two of these components are related to each other. People will assume that the price they spend will be comparable to the quality of the goods they will get. Therefore, nowadays discounts and promotions have an impact on customers' purchasing decisions because they will receive high quality / value at a lower price [25].

Nowadays, quality and price are not enough to increase the value of business competitive advantage, which is instead the company or business must improve their dependability and advantage of time and place/location to support product distribution [26]. Product Innovation is an action that we can take in increasing competitive advantage by looking for differentiators or product / service differentiation that can help the company's competitiveness [27]. Innovation strategies are the most important thing for competitive businesses, especially in MSMEs companies that can improve operational reliability [28]. The last indicator that affects business competitive advantages is Time to market, or a company's capacity to launch products more quickly, is the final metric that influences corporate competitive advantages.

2.2. The Unified Theory of Acceptance and Use of Technology Model

The UTAUT model is built into several factors of performance expectancy, effort expectancy, social influence, and facilitating conditions with other moderating variables such as age, gender, experience and willingness [29]. Performance expectancy is determined by the belief the person has that a system will enhance their ability to conduct business. Meanwhile, effort expectancy can be measured by how easy it is to use the system. Social influence which can be measured by how far the person perceives the expectations of others regarding the use of their system. Facilitating conditions where we can measure the extent of individual confidence. The purpose of using the UTAUT model for this study to ascertain whether technology use is accepted as a competitive advantage for organizations. UTAUT is often also widely used in understanding technology acceptance in various other sectors such as banking, health

and so on [30]. Of the four variables that will be correlated with business competitive advantage are categorised as Structural equation Models (SEM) because there are two models, namely reflective and formative.

2.3. Live Streaming Feature on E-Commerce

Live streaming is a feature that can provide a realistic atmosphere that allows real-time appearance of the streamer while providing details of each product through live video [31]. Many business owners like MSMEs use live streaming to achieve effectiveness and efficiency in communicating with customers and potential customers without having to meet face-to-face [12].

Live streaming in e-commerce can influence emotions and impulse purchases from consumers. Because of the current benefits, live streaming has become more popular in e-commerce, particularly during the global pandemic of COVID-19, of course the penetration of E-Commerce Live Streaming numbers soared [32]. Based on study, live streaming has become a feature that supports interactive communication between sellers and customers. With that, it can encourage audiences to ask questions directly and sellers can make an on-time response to the audience or buyers in real-time [33]. Thus, it will help consumers or customers make purchases quickly and precisely. Coupled with the fact that Generation Z is known to have impulsive buying behaviour. Impulsive behaviour is an act of buying unexpectedly or tends to purchase for goods that are not important [34]. This can certainly affect competitive business advantage.

2.4. Live Streaming Usage in Affecting Business Competitive Advantage

Transformation has occurred in people's daily shopping system.with the COVID-19 pandemic, people's habits have drastically shifted to online shopping [25]. In offline shopping, prospective buyers can ask many questions and can see directly with the product they want to buy. But in online stores, if prospective buyers want to ask questions about the product, they have to wait for a reply from the comments column or private chat with the seller. But it is unfortunate because it certainly takes time to wait for a reply.

Live streaming feature provides a solution for e-commerce by making it easier for potential buyers in finding their products that meet their needs and interacting directly with sellers [35]. The interaction between seller and audience that builds through interactive live streams is called Parasocial Relationship (PSR) [36]. Therefore, Live streaming can increase social presence for online shopping [37]. Real-time contact between the audience and the streamer leads to a greater social presence in live streaming, which can definitely foster a feeling of intimacy [38]. In addition, the live streaming feature can ensure audience trust in a product through direct interaction. This is also supported by the information conveyed directly by the streamer to the audience regarding the products offered. Trust formed through direct interaction and information delivery can drive competitive advantage in a business [39, 40].
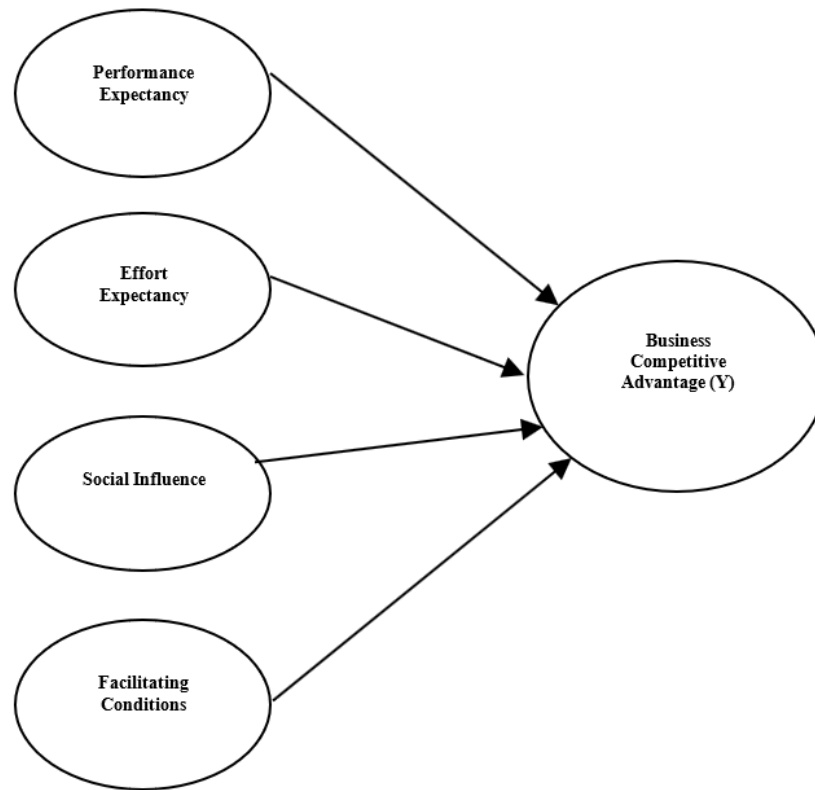
2.5. Research Model

Figure 1.
Research Model.

This study engages the UTAUT model as proposed in Figure 1 to measure how people can accept live streaming feature adoption that can affect business competitive advantage in the business world. Here we will discuss the correlation of core variables of technology acceptance which consist of Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions on the variable business competitive advantage as the dependent variable [29].

2.6. Hypotheses Development
2.6.1. Impact of Performance Expectancy of Live Streaming Feature Adoption on Business Competitive Advantage.

This theory explains that an action affecting their performance (performance expectancy) can significantly affect acceptance in the adoption of technology use. In this research, we will find out whether performance expectations in the ability to use live streaming technology can affect their perceptions of performance expectancy [29]. The research conducted shows that the ability to use technology does indirectly affect the competitive advantage. However, an organisation that is able to respond well to change and is willing to improve its capabilities or use of technology will have a direct effect on competitive advantage [41]. So, this research which states the relationship between the ability to use technology and competitive advantage can be used as a reference to hypothesise that the performance factor of using the live streaming feature can affect competitive advantage.

$H_{01:}$ Performance expectancy (PE) factor of Live Streaming feature adoption does not have a significant effect on the business competitive advantage of Indonesian MSMEs.

$H_{a1:}$ Performance expectancy (PE) factor of Live Streaming feature adoption has a significant effect on the business competitive advantage of Indonesian MSMEs.

2.6.2. Impact of Effort Expectancy of Live Streaming Feature Adoption on Business Competitive Advantage

Effort expectancy describes how a person's propensity to accept a technology can be determined by their impressions of the simplicity to use them [29]. According to several studies, a sustainable competitive advantage requires an attractive UX (user experience) design in technology to increase value for the audience. Effectiveness and efficiency, trust, satisfaction, location, emotion, and time, are some of the values that can be felt through the interactivity of the technology [42, 43].One of the interactive technologies that makes it easier for buyers and sellers to communicate is the live streaming option [35]. However, this is also supported by adequate resources and infrastructure to encourage capability in using technology, so that it will affect competitive advantage [44]. Therefore, competitive advantage may be significantly impacted by the work required to implement live streaming.

$H_{02:}$ Effort Expectancy (EE) factor of Live streaming feature adoption does not have a significant effect on the business advantage of Indonesia MSMEs.

$H_{a2:}$ Effort Expectancy (EE) factor of Live Streaming feature adoption has a significant effect on the business competitive advantage of Indonesian MSMEs.

2.6.3. Impact of Social Influence of Live Streaming Feature Adoption on Business Competitive Advantage

According to studies, social influence from the surrounding and closest people such as from colleagues to competitors and even friends or family will significantly influence individual behaviour [29]. Social norms have an important role in shaping behaviour and intention in adopting technology. Support from friends, teaching staff, and other close people in the use of technology will also encourage the willingness to adopt the technology [45, 46]. Thus, several studies have supported that social influence plays a role in shaping the ability to adopt technology. Therefore, social influence may have a big impact on business competitiveness when it comes to live streaming technologies.

$H_{03:}$ *Social Influence (SI) factor of Live streaming feature adoption does not have a significant effect on the business advantage of Indonesia MSMEs.*

$H_{a3:}$ *Social Influence (SI) factor of Live Streaming feature adoption has a significant effect on the business competitive advantage of Indonesian MSMEs.*

2.6.4. Impact of Facilitating Conditions of Live Streaming Feature Adoption on Business Competitive Advantage

Facilitating conditions are one of the factors of technology acceptance where the availability of infrastructure to support technology in an environment or organisation is one of the main drivers of technology acceptance [29]. So based on the theory, the accessibility of resources can encourage business actors to adopt technology in increasing the competitiveness of the company. In this case, we can assess that the presence of the facilities and infrastructure to promote the use of live streaming can also affect the competitive advantage of businesses. Therefore, in this hypothesis we want to find out whether there is a significant effect on technology adoption on business competitive advantages.

$H_{04:}$ *Facilitating Conditions (FC) factor of Live streaming feature adoption does not have a significant effect on the business advantage of Indonesia MSMEs.*

$H_{a4:}$ *Facilitating Conditions (FC) factor of Live Streaming feature adoption has a significant effect on the business competitive advantage of Indonesian MSMEs.*

3. Methodology

3.1. Data and Sample

This research employed quantitative methodology using a survey approach that relied on the perception of Gen Z in Indonesia with the majority of them consuming live streaming content and buying products through live streaming e-commerce. The study target population consists of Gen Z in Indonesia. This research adopted structural equation modeling (SEM) techniques for analysing the data. According to Hair, et al. [47] the ideal number of samples to be used in research study must be adjusted to 10 times the number of indicators. This makes our sample size to be targeted as much as 210 respondents. Research suggests that SEM can be meaningfully employed even with modest sample sizes, this study acknowledges the potential limitations associated with the sample size.

3.2. Measurement of Business Competitive Advantage

In measuring business competitive advantage, we can measure the level of customer satisfaction with the products or services we provide to them. Therefore, it can be said that customers are prioritised in every business [48]. We have several problems that affect the level of business competitive advantages, including high product or service prices, poor quality goods, inappropriate delivery, and no innovation made. This measurement is intended to determine the extent to which the use of this live streaming function to the level of competitive advantages obtained by organizations.

Table 1.
Dependant Variable Indicators.

Dependent Variable	Indicators
Business Competitive Advantages	Price/Cost
	Quality
	Delivery Dependability
	Product Innovation
	Time to Market

3.3. Measurement of Live Streaming Usage Perception Using UTAUT Model

In this research, we use the UTAUT model to understand public acceptance of technology adoption in the form of live streaming in e-commerce. Here are the 4 main components namely: performance expectancy, effort expectancy, social influence, and facilitating conditions.

Table 2.
Independent Variable Indicators.

Independent Variable Xue, et al. [29]	Indicators
Performance Expectancy	1. Live streaming feature helps in finding products that meet the needs of the audience. 2. Live streaming features can increase productivity in shopping activities. 3. Live streaming can simplify shopping activities. 4. Live streaming can provide more reliable product information. 5. Live streaming can shorten the time in receiving product information.
Effort Expectancy	1. Overall, the use of live streaming is very easy for me. 2. The interaction of using live streaming is clear and understandable. 3. Live streaming feature helps streamline the shopping process 4. I have no difficulty in using the live streaming feature.
Social Influence	1. People close to me influence my behaviour in convincing me to use the live streaming feature. 2. People who inspire me give me the idea to use the live streaming feature. 3. Companies support the use of live streaming.
Facilitating Condition	1. I have facilities that support me in using the live streaming feature. 2. I have the knowledge to use the live streaming feature. 3. The e-commerce platform I use provides facilities to support the use of live streaming. 4. The work environment or the place where I live provides infrastructure that supports me to use the live streaming feature.

4. Result and Discussion

4.1. Descriptive Statistics

The respondents in this study consist of 210 generation Z individuals in Indonesia. Respondent data analysis is necessary to understand their background. This study provides information of the respondents such as age, gender, domicile, use of live streaming features, and frequency of live streaming usage. Here below are the descriptive statistics on respondents' socio-demographic that represent the population of generation Z in Indonesia.

Table 3.
Descriptive Statistics.

Statistics		Age	Gender	Domicile	Usage	Frequency of Use
N	Valid	210	210	210	210	210
	Missing	0	0	0	0	0
Mean		2.07	1.49	1.54	1.00	4.43
Median		2.00	1.00	2.00	1.00	5.00
Mode		2	1	2	1	5
Std.Deviation		.513	.501	.499	.000	.683
Variance		.263	.251	.249	.000	.467

Based on the statistics above, Frequency of Use has the highest mean value of 4.43. The median value for Gender and Usage is 1.00. Age and Domicile have an identical median value of 2.00. While Frequency of Use has a median value of 5.00. Based on respondent data, the majority of the respondents

are women at 51.0%, followed by male respondents at 49.0%, with the majority aged between 20-25 years, who live in the Jabodetabek area. Based on the live streaming usage data, all the 210 respondents stated that they all used the live streaming feature.

For the Standard Deviation (SD) and Variance (VAR) values, each of them exhibit a good distribution as each value is below the mean value. All variables including Age, Gender, Domicile, Usage, and Frequency of Use have 100% valid data with no missing values.

4.2. Based on Age
Referring to the analysis of the distributed results, the researcher obtained the following details of the respondents profiles based on age.

Table 4.
Age.

	N	%
<20 years	21	10.00%
20 − 25 years	154	73.30%
26 − 30 years	35	16.70%

4.3. Respondent Profile Based on Age
From the table above, respondents with an age between 20 to 25 years old make up the majority, accounting for 73.3%. Next, respondents aged between 26 to 30 years old are in second place with 16.7%. Meanwhile, respondents under 20 years old rank third, representing 10.0% of the total respondents.

4.4. Based on Gender
The following table displays details of profile respondents by gender:

Table 5.
Respondent Profile Based on Gender.

Gender	N	%
Female	107	51.00%
Male	103	49.00%

From the table above, it can be seen that female respondents make up the majority, accounting for 51.0% of the total respondents. Meanwhile, male respondents represent 49.0% of the total.

4.5. Based on Domicile
The details of the respondents profile based on domicile in this study are as follows:

Table 6.
Respondent Profile Based on Domicile.

Domicile	N	%
Jabodetabek	96	45.7%
Non-Jabodetabek	114	54.3%

The result concluded that the majority of the respondents reside in Non-Jabodetabek, with a total of 54.3% respondents. Meanwhile, the rest of 45.7% respondents are from Jabodetabek.

4.6. Based on Use of Live Streaming Features
The following table display detail of respondent profile by the use of the live streaming feature:

Table 7.
Respondent Profile Based on Use of Live Streaming Features.

Usage	N	%
Yes	210	100.0%

From Table 7 above, all respondents (100%) use live streaming, while none of the respondents reported not using it.

4.7. Based on Frequency of Live Streaming Usage

The details of respondent profiles based on frequency of live streaming usage in this study are as follows:

Table 8.
Respondent Profile Based on Frequency of Live Streaming Usage.

Frequency of Use	N	%
Not Often	4	1.9%
Neutral	11	5.2%
Often	85	40.5%
Very Often	110	52.4%

From the result above, the majority of respondents (52.4%) use the service very often. This is followed by 40.5% of respondents who use it often. Meanwhile, 5.2% of respondents have a neutral frequency of use, and the least, 1.9%, use it not often.

4.8. Data Analysis
4.8.1. Structure Test

In conducting a structure test, the outer model will measure the relationship between latent variables (variables that cannot be measured directly) and their representative indicators. This model is also often referred to as an external measurement, as it connects unobservable variables with measurable data. Testing the outer model is also useful for assessing validity of each indicator in this research.
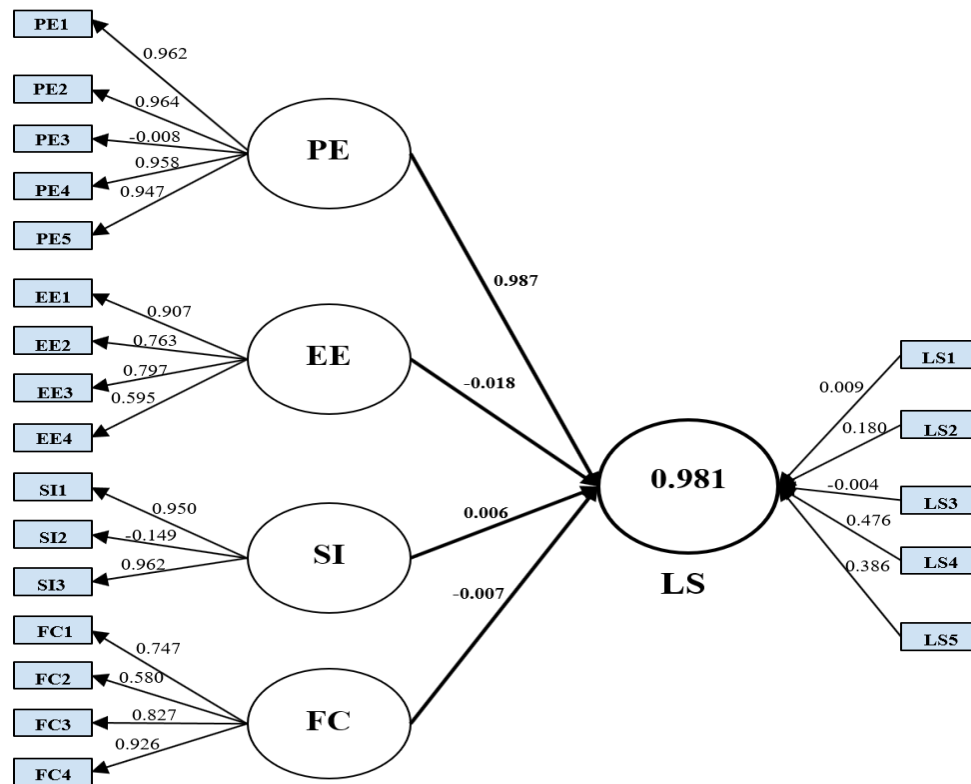
Figure 2.
Structure Test.

The structure test involving 21 indicators shows that only 15 indicators are valid. The ideal Loading Factor value should be greater than or equal to 0.7 [49]. Thus, indicators PE3, EE4, SI2, FC2, LS1, and LS3 show that the outer loading value is below the minimum outer loading value mentioned, thus making them invalid.

This analysis will be further discussed in the convergent validity measurement table which shows the results of the outer loading value before invalid data is removed and after being removed.

4.8.2. Convergent Validity

Construct measurement must be correlated to test convergent validity. In SmartPLS, convergent validity is assessed through reflective indicators by examining the Loading Factor value, which will show the strength of correlation between the item scores and the construct. According to previous study, the ideal Loading Factor value should be equal or above 0.7 ($\geq$ 0.7) [49]. The results of the convergent validity test as followed:

Table 9.
Convergent Validity.

Variable	Indicator	Outer Loading Value before Removal	Outer Loading Value after Removal
Performance Expectancy (X1)	PE1	0.962	0.962
	PE2	0.964	0.963
	PE3	-0.008	-
	PE4	0.958	0.958
	PE5	0.947	0.947
Effort Expectancy (X2)	EE1	0.907	0.896
	EE2	0.763	0.804
	EE3	0.797	0.837
	EE4	0.595	-
Social Influence (X3)	SI1	0.950	0.951
	SI2	-0.149	-
	SI3	0.962	0.963
Facilitating Condition (X4)	FC1	0.747	0.742
	FC2	0.580	-
	FC3	0.827	0.866
	FC4	0.926	0.927
Live Streaming Usage	LS1	-0.003	-
	LS2	0.942	0.943
	LS3	-0.062	-
	LS4	0.968	0.968
	LS5	0.956	0.956

The table above presenting the result of outer loading calculations shows that most of the items' outer loading values exceed 0.7. However, each of the variables has at least one or two items with outer loading value that did not exceed the expected value or below 0.7, such as PE3, EE4, SI2, FC2, LS1, LS3.

The convergent validity table above includes 21 indicators to assess and measure latent variables. A 5-point Likert scale, with 1 indicating "strongly disagree" and 5 meaning "strongly agree," is applied for measurements. The results of the analysis show that several indicators of the use of live streaming features including PE3 (Live streaming features make shopping activities easier), EE4 (There are no difficulties using live streaming features), SI2 (Inspiring people for gen z provide ideas for using live streaming features), FC2 (Have knowledge in using live streaming features), and gen z's perceptions in using live streaming features including LS1 (More affordable product prices), and LS3 (More reliable delivery services) are invalid, so these indicators are not related to the use of live streaming features. Meanwhile, other indicators or items are more likely to be related to the adoption of the live streaming feature on business competitive advantage as they exhibit values that vary between 0.74 to 0.96, which indicates validity and reliability of these indicators. Therefore, the measurement results illustrate that most of the indicators used are both valid and reliable, making them suitable for use in future research.

Indicators or items that have a value below 0.7 must be removed. After removal, this leaves a final result showing that there is a harmonious relationship between the items of each variable in the construct. These results also show that the construct can be used to examine each variable. The above model is also proven to have a reliable database, so it can be used for further related research.

4.8.3. Discriminant Validity
Discriminant validity ensures that each latent variable is distinct from the others in the model. A model is considered to have good discriminant validity if the highest loading for each latent variable is greater than that of other variables.

Table 10.
Discriminant Validity.

	X1	X2	X3	X4
Performance Expectancy (X1)				
Effort Expectancy (X2)	0.053			
Social Influence (X3)	0.486	0.121		
Facilitating Condition (X4)	0.069	0.112	0.051	

According to Rönkkö and Cho [50] correlation threshold should fall between 0.8 and 0.9 [50]. In other words, there is a problem in the correlation between variables when the values are above 0.9. Based on the result, all the correlation values are under 0.9 and 0.8. From the table above, the value of each variable ranged from 0.051, which is the lowest value, to 0.468 which is the highest value. Therefore, the variables used in this study have a good correlation, with no correlation problem between variables.

4.8.4. Internal Consistency Reliability Measurement

The model fit results of this study are considered good because the SRMR value is below 0.08, with an acceptable threshold of up to 0.10. Additionally, the NFI value is also good as it is close to 1.

Table 11.
Internal Consistency Reliability Measurement.

Variable (Reflective Model)	Cronbach's Alpha after Removal	Composite Reliability after Removal	AVE after Removal
Performance Expectancy (X1)	0.970	0.810	0.716
Effort Expectancy (X2)	0.801	0.843	0.720
Social Influence (X3)	0.908	0.970	0.917
Facilitating Conditions (X4)	0.804	0.921	0.915

Cronbach's Alpha with the value transcend 0.8 is generally considered to have a good reliability [51]. As for the variables in the reflective model table, it shows Cronbach's Alpha and Composite Reliability values that have met the minimum reliability value with the value above 0.8. The acceptable range for achieving Cronbach Alpha reliability is 0.7 to 0.9, where the reliability level of 0.7 is still considered good, while for a reliability level of 0.9 is considered excellent. The minimum composite reliability value is 0.7 [52]. It can be seen in the table that composite reliability value falls in between 0.81 to 0.97, Thus the research model above has reliable data for further research.
Afterward, the Average Variance Extracted (AVE) value should outstrip 0.50.

Cheung, et al. [53]. The AVE value on the table shows a good result with a range of 0.71 to 0.91, thus exceeding the minimum value of 0.5. This indicates that AVE values of all variables have achieved convergent validity. Based on the result, the construct appears to have an adequate level of reliability and validity and can be used to measure the variables used in this study.

4.8.5. Multicollinearity

The multicollinearity test is useful to decide whether independent and dependent variables correlate significantly. The regression model will show the Variance Inflation Factor (VIF) value which will indicate whether the model below is free from multicollinearity.

Table 12.
Multicollinearity.

Indicators	VIF
PE -> LS	1.271
EE -> LS	1.018
SI -> LS	1.278
FC -> LS	1.011

Based on the table above, PE has a VIF of 1.271, EE has a VIF of 1.018, SI has a VIF of 1.278, and FC has a VIF value of 1.011. All the indicators have a VIF value below 5, meeting the recommended criteria [54].This implies that the model is strong and free from issues related to multicollinearity.

4.9. Hypothesis Test

In conducting data analysis, multiple linear regression analysis methods are applied to evaluate predictions accuracy related to how independent variables impact the dependent variables. This analysis is used to examine the impact of effort expectancy, facilitating condition, performance expectancy, and social influence on live streaming adoption impacting business competitive advantage using the multiple linear regression formula.

4.9.1. Multiple Linear Regression Analysis

Multiple linear regression analysis investigates the impact of two or more independent variables on a single dependent variable [55]. Therefore, the analysis model will help researchers to: 1) Analyze which independent variables that significantly impact the dependent variable 2) Forecasting the dependent variable value based on given independent variable values. Multiple regression analysis is conducted when there are at least two independent variables.

Table 13.
Multiple Linear.

Model	t	Sig.
(Constant)	5.947	<0.01
X1	27.354	<0.01
X2	1.049	0.296
X3	1.785	0.076
X4	–5.754	<0.01

5. Regression Analysis

Afterward, to find out whether there is a partial effect, a parameter significance test (T-test) is enforced. The significance value in Table 13 indicates whether a partial influence exists or not of each independent variable. Based on the result shown in Table 13, showed that Performance Expectancy (X1) and Facilitating Condition (X4) Play a significant partial effect on the live streaming usage, as evidenced by their significance values being below 0.05.the significance value for X1 and X4 are less than 0.01. This means that there is a significant partial effect on the Performance Expectancy and Facilitating Conditions variable. As the result on hypotheses testing, Ho1 and Ho4 succeed to be rejected. Thus Both Ha1 and Ha4 are accepted,which means that Performance Expectancy (X1) and Facilitating Condition (X4) factors of live streaming feature adoption do have significant effect on the business advantage of Indonesia MSMEs.

The significance of Performance Expectancy (X1) indicates that technology that can improve performance which makes it easier to achieve benefits in certain goals is certainly preferred. Simplicity and time savings in shopping activities when using the live streaming feature is certainly also a driver of the desire to use this feature. This can be proven that indeed the live streaming feature is very

interactive thanks to the advantages of this feature that allows real-time communication that could lead to creating customer engagement [10, 19, 20, 35]. When viewed from the age range of gen z respondents, the majority of which are in the range of 20-25 years, gen z itself is the most impulsive generation in terms of shopping. Thus, any facility or technology that supports them in making shopping easier will certainly be more desirable. The study also shows that the majority of respondents are women, who are known to be more impulsive in shopping. This feature will also be very beneficial for respondents who are outside Jabodetabek, especially in areas that are far from economic and technological centers, so that this interactive feature helps shopping activities even better. After all, MSMEs can further maximize its services by considering more creative utilization of life streaming features to increase its competitive advantage [12].

Facilitating Condition (X4) also plays as a main key role of gen z acceptance on live streaming feature usage. Without proper facilities that support the use of live streaming features, such as internet, gadgets, and all other necessary tools, those particular features that require all of the mentioned facilities can not be utilized properly. Infrastructure is needed to support and encourage the desire to use the technology, especially for those who live in rural areas [29]. Ini this study, the majority of the respondents lived outside Jabodetabek area. This area, when compared to the Jabodetabek area, certainly does not have as advanced infrastructure as the Jabodetabek area in terms of supporting the use of certain technologies. Lack of infrastructure in supporting the use of technologies in non-Jabodetabek areas could lead to a knowledge gap in using certain technologies such as live stream features, in comparison for those who lived in Jabodetabek area. Fortunately, most of gen z are already fluent in using much of the technologies existing these days. They certainly have access to use certain digital technologies to support their shopping activities like e-commerce. MSMEs can take advantage of this moment to be able to develop infrastructure and provide good facilities to support the use of live streaming features in e-commerce. By paying attention to facilitating conditions, MSMEs can also excel in competition by facilitating consumer access to the company's brand. Thus, this research have stated that the simplicity of using the live streaming features, along with the available support systems, significantly impacts users' choices to participate in using the features.

It is shown in Table 13 that the significance value for Effort Expectancy is 0.296 and the sig value for Social Influence is 0.076. Unfortunately, these indicators such as Effort Expectancy (X2) and Social Influence (X3) didn't show that live streaming has a significant impact on business advantage, as their significance values exceed 0.05. No significant partial effect indicated on X2 and X3. Thus, both Ho2 and Ho3 failed to be rejected resulting in the Effort Expectancy (X2) and Social Influence (X3) factors of live streaming feature adoption do not have significant effect on the business advantage of Indonesia MSMEs. Effort Expectations and Social Influence did not have a significant impact in relation to users' decisions to use the live streaming feature. This can be caused by certain factors and limitations. One of them is due to lack of supporting indicators. During the structure and convergent validity test, removal of several indicators was executed which might be possible as the main factor in influencing data sufficiency for the hypotheses testing.

The fact tells that Effort Expectancy (X2) is not the primary concern for MSMEs when they adopt live streaming, but as we can see many respondents prioritize the effectiveness and business impact. Based on demographic data, the ages of our respondents are around 20-25 years old, and many younger respondents are typically tech savvy and they think using live streaming feature is very easy to use (high EE). if most of our respondents think that this live streaming feature so effortless to use, effort variable will become a non significance. We can look on Table 6, it shows our respondents are from Indonesia's urban (Jabodetabek), so we can say that they have better internet infrastructure and make easier to use this feature (High EE). due to mostly our respondents are form Indonesia's urban (Non Jabodetabek) it means they may have technical barriers which explain why Effort Expectancy to be insignificant.

Thereupon, the result also provides implication that Social Influence (X3) is not significantly encourage MSMEs adoption decisions. Most MSMEs may rely more on internal business considerations rather than getting influenced by others. In addition, studies have shown that women are more influenced by social suggestion than the men. Because of the near-equal gender split in of the respondents as shown in Table 5, it makes canceling out the social influence effect and making it non-significant overall. Furthermore, in Tables 4 and 8, most of our respondents are frequently early adopters influenced by social media, and everyone accepts live streaming because of trends (especially in Indonesia). This research suggest that while perceived benefits and facilitations are key drivers to archieve user adoption, maybe effort expectancy and social influence may not be as crucial in determining user engagement in live streaming.

6. Conclusion

The multicollinearity test confirms that all independent variables meet the recommended Variance Inflation Factor (VIF) criteria and no multicollinearity issues found on the regression model. Furthermore, the model fit results show an acceptable value of SRMR which did not outstrip the value of 0.10, and the NFI value is close to 1, suggesting that the model has a good fit. This study reveals that variables such as Performance Expectancy and Facilitating Condition significantly impact the live streaming usage, as evidenced by their significance partial effect values being below 0.01. This suggests that users' expectations regarding the benefits of live streaming and other supporting facilities have a contribution in influencing their live streaming engagement. These findings are relevant to the study conducted by Farida and Setiawan [23] where the performance expectancy significantly affects actual usage [56]. Live streaming enhances user engagement by creating an interactive experience that encourages participation and loyalty [57]. Businesses can optimize live streaming to improve business competitive advantage by ensuring strong facilitating conditions, such as reliable technology and engaging content, to maximize user interaction and retention [58].

On the other hand, Effort Expectancy and Social Influence did not show a significant impact, as their significance values exceed 0.05. This implies that the ease of use of live streaming features and the influence of social factors may not strongly determine users' decisions to use the feature. These findings suggest that while perceived benefits and supporting infrastructure are key drivers of adoption, usability and social influence may not be as crucial in determining user engagement in live streaming.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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Appendix
Research Questionnaire on Indonesian External Auditors.

Variable	Indicators	Option
Section 1 : Socio demographic	1. Name (Nama) 2. Age (Usia) 3. Gender 4. Domicile (Domisili)	- - ▪ Male ▪ Female -
Section 2 : Voluntariness of Live Streaming Feature Usage	1. Have you ever used the live streaming feature on an e-commerce platform? *(Apakah Kamu pernah menggunakan fitur live streaming di platform e-commerce?)* 2. How often do you use the live streaming feature on e-commerce platforms? (*Seberapa sering Kamu menggunakan fitur live streaming di platform e-commerce?*) 3. What is your purpose for using live streaming feature? (*Apa tujuan anda menggunakan fitur live streaming?*)	▪ Yes ▪ No 1 = Strongly Disagree *(Sangat Tidak Setuju)* 2 = Disagree *(Tidak Setuju)* 3 = Neutral *(Netral)* 4 = Agree *(Setuju)* 5 = Strongly Agree *(Sangat Setuju)* ▪ To search for products to purchase (Untuk mencari produk yang akan dibeli) ▪ Just looking at the products displayed on the live stream (Hanya sekedar melihat-lihat produk yang di tampilkan di live stream) ▪ To obtain more detailed information about the products displayed (Untuk mendapatkan informasi lebih detail terkait produk yang di tampilkan) ▪ Just for entertainment purposes (Hanya sekedar untuk hiburan saja)

Section 3 : Your thoughts on the Live Streaming feature on e-commerce platforms	1. live streaming brings products at a more affordable price *(Live streaming di e-commerce menghadirkan produk dengan harga yang lebih terjangkau)* *1.* live streaming is able to show/display product quality in real-time *(Fitur live streaming di e-commerce dapat membantu anda dalam menunjukan/menampilkan kualitas produk secara real-time)* *2.* live streaming is able to provide delivery reliability by meeting product delivery schedules *(Fitur live streaming di-ecommerce mampu menyediakan pelayanan pengiriman yang lebih handal dengan memenuhi jadwal pengiriman produk)* *3.* Live streaming is able to engage consumers directly in exploring ideas and understanding their needs, thus accelerating product innovation *(Fitur live streaming mampu melibatkan konsumen secara langsung dalam mengeksplorasi ide dan memahami kebutuhan mereka, sehingga mempercepat inovasi produk)* *5. live streaming is able to deliver products in a short time in the market (Fitur live streaming mampu dalam menghadirkan produk dalam waktu singkat dalam pasaran)*	1 = Strongly Disagree *(Sangat Tidak Setuju)* 2 = Disagree *(Tidak Setuju)* 3 = Neutral *(Netral)* 4 = Agree *(Setuju)* 5 = Strongly Agree *(Sangat Setuju)*
Performance Expectancy	1. Live streaming feature helps in finding products that meet the needs of the audience *(Fitur live streaming membantu dalam menemukan produk yang sesuai dengan kebutuhan anda)* 2. Live streaming features can increase productivity in shopping activities *(Fitur live streaming dapat meningkatkan produktivitas dalam kegiatan berbelanja anda)* 3. Live streaming can simplify shopping activities *(Fitur live streaming dapat mempermudah aktivitas berbelanja)* 4. Live streaming can provide more reliable product information *(Fitur live streaming dapat memberikan informasi produk yang lebih handal)* 5. Live streaming can shorten the time in receiving product information *(Fitur live streaming dapat mempersingkat waktu dalam menerima*	1 = Strongly Disagree *(Sangat Tidak Setuju)* 2 = Disagree *(Tidak Setuju)* 3 = Neutral *(Netral)* 4 = Agree *(Setuju)* 5 = Strongly Agree *(Sangat Setuju)*

	informasi produk)	
Effort Expectancy	1. Overall, the use of live streaming is very easy for me (*Secara keseluruhan, penggunaan live streaming sangat mudah bagi saya*) 2. The interaction of using live streaming is clear and understandable (*Interaksi menggunakan live streaming jelas dan mudah dipahami*) 3. I don't need a lot of time in shopping using live streaming (*Fitur live streaming membantu mempersingkat proses berbelanja*) 4. I have no difficulty in using the live streaming feature. (*Saya tidak mengalami kesulitan dalam menggunakan fitur live streaming*)	1 = Strongly Disagree (*Sangat Tidak Setuju*) 2 = Disagree (*Tidak Setuju*) 3 = Neutral (*Netral*) 4 = Agree (*Setuju*) 5 = Strongly Agree (*Sangat Setuju*)
Social Influence	1. People close to me influence my behaviour in convincing me to use the live streaming feature. (*Orang terdekat saya memengaruhi perilaku saya dalam meyakinkan saya untuk menggunakan fitur live streaming*) 2. People who inspire me give me the idea to use the live streaming feature. (*Orang yang menginspirasi saya memberikan saya ide untuk menggunakan fitur live streaming*) 3. In general, companies support the use of live streaming. (*Perusahaan ditempat saya bekerja mendukung untuk menggunakan fitur live streaming*)	1 = Strongly Disagree (*Sangat Tidak Setuju*) 2 = Disagree (*Tidak Setuju*) 3 = Neutral (*Netral*) 4 = Agree (*Setuju*) 5 = Strongly Agree (*Sangat Setuju*)
Facilitating Condition	1. I have facilities that support me in using the live streaming feature. (*Saya memiliki fasilitas yang mendukung saya dalam menggunakan fitur live streaming*) 2. I have the knowledge to use the live streaming feature. (*Saya memiliki pengetahuan untuk menggunakan fitur live streaming*) 3. The e-commerce platform I use provides facilities to support the use of live streaming. (*Platform e-commerce yang saya gunakan menyediakan fasilitas untuk mendukung penggunaan live streaming*) 4. The work environment or where I live provides infrastructure that supports me to use the live streaming feature. (*Lingkungan kerja atau tempat tinggal saya menyediakan infrastruktur yang mendukung saya untuk menggunakan fitur live streaming*)	1 = Strongly Disagree (*Sangat Tidak Setuju*) 2 = Disagree (*Tidak Setuju*) 3 = Neutral (*Netral*) 4 = Agree (*Setuju*) 5 = Strongly Agree (*Sangat Setuju*)