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Service Quality and Trust as Predictors of Online Purchasing Decisions Mediated by Perceived Risk

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Abstract: Online purchasing decision-making is currently faced with a lack of trust from consumers as a result of the inability of marketers to deliver services satisfactorily, which results in the emergence of risk perceptions in purchases. This study aimed to determine how the effect of seller service quality and consumer confidence on perceived risk and how they influence purchasing decisions. Another goal is to determine the role of perceived risk as an intervening variable. The design of this study was a cross-sectional survey of respondents in the city of Serang and its surroundings. The sampling technique used is purposive sampling. The survey used the Google form with a total of 129 respondents. The analysis method uses descriptive and inferential statistics and SMART PLS software is used for data processing. The results showed a significant negative effect of service quality on perceived risk and a significant negative effect of perceived risk on online purchasing decisions. Perceived risk is an intervening variable from consumer confidence to online purchasing decisions. Online purchasing can be enhanced by increasing trust and service and reducing perceived risk.

Keywords: online purchasing decision, perceived risk, trust, service quality

JEL Classification: D11, D12, D 18, M31



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PUBLIC INTEREST STATEMENT

The risk of buying online is an interesting issue and is an important aspect in considering purchasing decisions. Perceived risk of buying online is an important consideration because when buying online, consumers cannot directly observe the product they are going to buy. Consumers only rely on product images or videos displayed in online media. Therefore, the marketer's task is to convince consumers so that the level of perceived purchase risk gets smaller. One way to do this is to try to increase consumer confidence. Trust is an important aspect of the business. Without trust, consumers will tend to hesitate in purchasing decisions, because the purchase risk will be higher. In addition, service quality is also an important factor in influencing purchasing decisions. Poor service quality will increase perceived risk and of course, will affect online purchasing decisions. Further research needs to include new variable aspects as variables that influence perceived risk and purchasing decisions.



1. Introduction

Online sales continue to increase over time. The use of digital technology as a means to encourage increased business activities, increase productivity and encourage economic growth (Kahrović & Avdović, 2021). Business people are currently using digital marketing as a means to communicate and promote their products and at the same time conduct interactive marketing (Stone & Woodcock, 2013; Syahputra, 2021). Online business activities as a result of the rapid development of digital technology used as a means of business activities continue to increase (Bican & Brem, 2020). The increase in online business activities is of course a result of the increasing number of consumers who decide to buy online. Online purchasing decisions are decisions that require careful consideration. Various aspects need to be considered in deciding to buy online (Devkishin, Rizvi, & Akre, 2020). Even though it has been through consideration, there are still many consumer complaints after deciding to buy online. For example, complaints about delivery mismatches, customer relations, products, product returns and refunds, and others (Nasir, 2004).

Online purchasing decisions are influenced by many variables including service quality, trust, and perceived risk. Research on the effect of service quality on perceived risk has not been carried out much. From the search results, there are results of research conducted by Aprilia (2021) which found that there is a negative effect of Service Quality on perceived risk with a coefficient of 0.328. The results of this study are no different from those conducted by Jin and Lim (2021). Meanwhile, Yulianto et al. (2014) found a negative effect of online service quality on perceived risk with a coefficient of -0.527. Oktavio, Kartika, Tarigan, and Kaihatu (2021) found that there was no significant negative effect of perceived service quality on perceived risk.

Much research has been done on trust and perceived risk. Some researchers place trust as a moderating variable of the influence of trust on purchasing decisions (Setiobudi, Anggraeni, Teofilus, & Sandi, 2023; Qalati, Vela, Li, Dakhan, Thuy, & Merani, 2021). Other research places trust and perceived risk as independent variables on other variables as if the two are not related to each other (Jin & Lim, 2021; Meyliana, Fernando, & Surjandy, 2019; Harianto, Ellyawati, 2023; Amarullah, Handriana, and Maharudin, 2022). Meanwhile, the results of research that position trust as an independent variable of perceived risk are very few. Adiwijaya, Kaihatu, Nugroho, and Kartika (2017) found that there is no negative effect of Trust on perceived risk. The opposite result was found by Siegrist, Gutscher, and Earle (2005) that a high level of trust and confidence reduces perceived risk, compared to a low level of trust and confidence. There is very little research on the effect of trust on perceived risk and the results of the two studies show significant differences in results, research on the effect of trust on perceived risk needs to be done to confirm that trust affects perceived risk. The novelty of this study is to position the trust variable as the independent variable for perceived risk, not vice versa, and to place perceived risk as an intervening variable for online purchasing decisions, not as a moderating variable. It is hoped that the strategy for encouraging online purchasing decisions will be more accurate. Based on the urgency above, this study aims to determine the effect of service quality on perceived risk, the effect of trust on perceived risk, the effect of perceived risk on online purchasing decisions, the direct and indirect effects of service quality on online purchasing decisions and the direct and indirect effects of trust in online purchasing decisions.

2. Literature Review

2.1 Purchase Decision

Purchasing decisions are a series of processes that start from the emergence of needs, searching for information on the product to be purchased, evaluating various alternatives, choosing the brand of product to be purchased and the store where to buy, and the last is post-purchase evaluation (Mothersbaugh & Hawkins, 2020). One of the variables that influence online purchasing decisions is perceived risk. Bezes

(2016) compared perceived risk between online and offline purchases finding that online purchase risk is higher and deters online purchases more. Similar results were also found by Sims and Su (2012) that the perceived risk in online purchases is greater. Perceived risk will certainly be influenced by several other variables. Perceived risk will decrease the level of consumer confidence in the seller is high (Dogbe, Zakari, & Pesse-Kuma, 2019). Another variable that also affects the level of perceived risk is service quality (Qalati, Ostic, Sulaiman, Gopang, & Khan, 2022).

2.2 The Effect of Service Quality on Perceived Risk

The concept of service quality is still very relevant and is a timeless concept (Prakash & Mohanty, 2012). The development of the concept of service quality (called SERVQUAL) has been carried out by Parasuraman, Zeithaml, and Berry (1988). SERVQUAL is a measurement of customer satisfaction with the quality of services offered by the company using a multi-item scale consisting of five dimensions of service quality. The SERVQUAL concept itself is the result of the compaction of ten dimensions of service quality measurement into five dimensions, namely tangible, reliability, responsiveness, assurance, and empathy. Although the SERVQUAL concept is steady, it is not a perfect concept, and therefore, the SERVQUAL concept for electronic services quality (services via the internet called E-S QUAL) was developed by Parasuraman, Zeithaml, and Malhotra (2005). E-S QUAL is a multi-item scale used to measure customer satisfaction with the services provided by the company through a website where customers make purchases online. The E-S QUAL dimension consists of four dimensions, namely efficiency, system availability, fulfillment, and privacy.

Service quality is the basis for a consumer in assessing the services provided in making transactions (Bauerová, 2018) All consumers expect good and responsive service so that consumers become more confident in making *online* and *offline* purchase transactions. According to Simamora and Susanti (2017), service quality on web-based *tracking* systems affects customer satisfaction with risk perception as a *mediating* variable. This means that service quality has a negative effect on risk perception, and service quality has a positive effect on customer satisfaction. Meanwhile, Habibi and Rasoolimanesh (2020) found that there is a positive moderating effect of service quality on perceived value. This means that there is a negative effect of service quality on perceived risk and there is also a negative effect of perceived risk on perceived value.

2.3 The Effect of Trust on Perceived Risk

Trust in the business world is important and has always been the main capital in shaping the creation of a business environment expected by business people and all consumers who enjoy the products produced. In online purchases, trust plays an important role in reducing perceived risk. The higher the trust, the less risk is felt (Jadil, Rana & Dwivedi, 2022). Perceived risk comes from a lack of trust in the credibility of online sellers (Vos et al., 2014). The results of other studies show that performance trust has a significant effect on performance risk and manufacturer trust has an effect on privacy risk (Kenesey et al., 2022). Risk is always related to losses felt by consumers. The results of Alrawad et al. (2023) show that in online purchases three risks influence purchasing behavior, namely financial risk, information risk, and privacy risk (Amirtha, Sivakumar & Hwang, 2020).

2.4 The Effect of Trust on Purchasing Decisions

The main factor for a consumer to buy and sell online through e-commerce is the trust of a consumer in e-commerce. Trust creates comfort for consumers so that consumers can transact safely. As a result, companies that can maintain consumer trust can retain customers and be able to compete in the market. According to Pautina, Ismail, and Abdussamad (2022) in their journal publication discussed the influence between convenience variables and trust variables with purchasing decisions made using online applications, e-commerce can be trusted with the ratings given by consumers. E-commerce that can maintain trust will make it easier for

consumers to make purchasing decisions. Pautina et al. (2022) stated that consumer trust in the product can increase the product rating. This means that trust is the main key in the online transaction process in particular and offline in general. So that it has an impact on purchasing decision-making. Purchasing decision-making is a choice from several existing choices.

Amanah, Harahap, Gunarto, and Purwanto (2020) stated that purchasing decisions are based on the wants and needs that exist in the minds of consumers to choose the product to be purchased. Ashman, Solomon, and Wolny (2015) mentioned that the model of decision-making from Engel-Kollatt and Blackwall (called EKB) is still relevant in the context of digital culture. There are five stages in making a purchase decision. The first stage is knowing the problem, the second stage is looking for information about the goods to be purchased, then the third stage is potential consumers will evaluate alternative goods to be purchased, the fourth stage is making a purchase decision where consumers have made the choice to be purchased and the last stage is consumer behavior after making a purchase. The results of other research conducted by Karim, Wolok, and Radji (2020) find that trust is a good enough criterion. This means that trust is a factor that can influence consumer purchasing decisions. Consumer trust can be in the form of knowledge about a product or can be in the form of trust in testimonials from other consumers so that it can influence purchasing decisions. Like the research that has been done (Rabiana & Akib, 2020).

2.5 The Effect of Service Quality on Purchasing Decisions

Improving service quality is the main thing for sellers to satisfy and attract consumer purchasing power because service quality is a factor that is considered in purchasing decisions. The quality of service provided by services is not the same as the services provided by e-commerce so service guarantees and satisfaction measurements are different. Nawangsari and Pramesti (2017) found the influence of security, trust, and service quality, with purchasing decisions stating that purchasing decisions are strongly influenced by service quality. If the service quality is good, it will further increase the decision to purchase.

According to Baskara and Hariyadi (2012), the quality of service provided by sellers varies. So that the services provided by sellers must be more convincing to consumers by providing guarantees such as honesty, quality of goods, money-back guarantees, and other services. Service has a positive influence on purchasing decisions. These results have similarities with research conducted by Suwandi, Sujono, and Hermawati (2022) stated that customer service quality has a positive and significant effect on alternative decision-making. This means that the higher the quality of the services offered by the company, the more customer purchasing decisions will increase.

2.6 The Effect of Perceived Risk on Purchasing Decision

Risk is one of the variables that will be accepted by a consumer in buying an item, the risk perception of consumers can change consumer behavior and loyalty to a product. Risk perception is a condition of uncertainty that consumers think about the product they choose. When consumers doubt the quality of the product or the quality of the company's service, it can affect the desire and decision of consumers to buy a product. Research that has been conducted by Gerber, Ward, and Gerber (2014) found that perceived risk has an impact on online behavior. Another study conducted by Gazali and Tommy (2019) found that financial risk, product risk, time risk, delivery risk, social risk, and information security risk have a negative effect on purchasing decisions. Alamsyah (2014) in his research found that perceived risk has a significant negative effect on purchasing decisions, and likewise, the research conducted by Leksono (2021) found that risk perception has a negative but insignificant effect on purchasing decisions.

3. Conceptual Framework

Based on the literature review, which explains the relationship between the variables studied, the relationship between variables can be described in the conceptual framework below. This conceptual framework also shows the alleged relationship between variables. Figure 1 shows that service quality is an independent variable or exogenous variable, as well as the trust variable. Meanwhile, the risk perception variable is an intervening variable that is thought to function to mediate service quality and trust on online purchasing decisions.

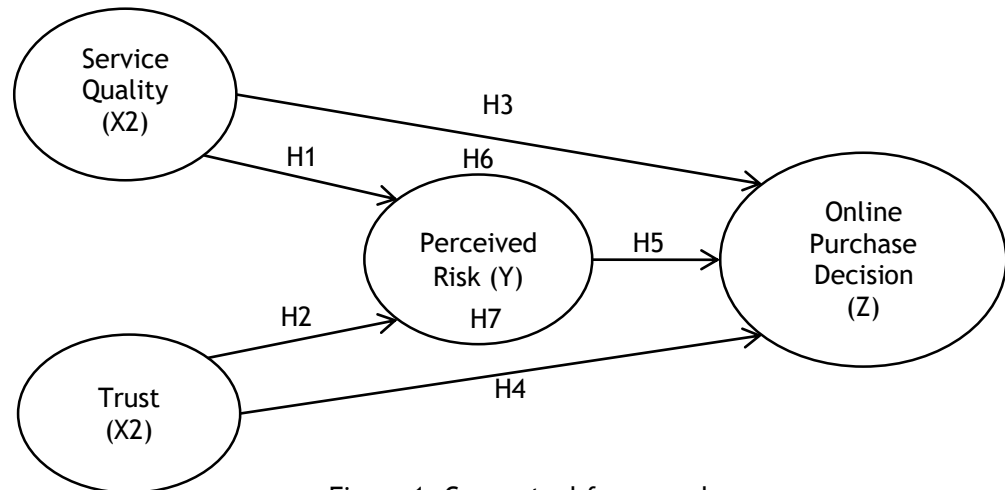


Figure 1. Conceptual framework

Based on the description of the literature review and conceptual framework, the following hypothesis is stated:

- H1: Service quality has a significant negative effect on the perceived risk
- H2: Trust has a negative effect on the perceived risk
- H3: Trust has a positive effect on purchasing decisions
- H4: Service quality has a positive effect on consumer purchasing decisions
- H5: Risk Perception has a negative effect on purchasing decisions
- H6: There is an effect of service quality on purchasing decisions through perceived risk
- H7: There is an effect of trust on online purchasing decisions through perceived risk

4. Methods

4.1 Participants

This research is quantitative research that will test several hypotheses. The design of this research is a cross-section survey. Data were collected from July to August 2022. The respondents were university students in Serang City, Banten. The sampling technique used is convenience sampling, namely, data collection techniques that meet certain practical criteria, such as ease of accessibility, geographical proximity, availability at certain times, or openness to participate (Mann, 2013). The sample size of 129 people has met the requirements recommended by Hair, Black, Babin, and Anderson (2018) that the number of observations for each independent variable should use a ratio of 15:1 or 20:1. This means that each variable 15 to 20 observations are taken. In this study, the number of independent variables (including intervening variables) is four variables. Thus the recommended minimum sample size is $4 \times 20 = 80$. Thus the sample size of 129 is far exceeding the recommended minimum sample size.

4.2 Measurement

The data in this study were collected using a questionnaire personally to each respondent. Questionnaires were distributed via google form. The questionnaire was designed to be able to collect data related to research variables, namely online purchasing decisions, perceived risk, service quality, and trust.

The online purchasing decision is a purchasing decision process via the Internet which includes the emergence of needs, information search, evaluation of alternatives, purchase, and post-purchase (Grewal, Roggeveen & Runyan, 2013). The instrument for measuring online purchasing decision variables consists of five statement items, namely (1) problem recognition, (2) information search, (3) evaluation of alternatives, (4) purchase, and (5) post-purchase evaluation. Perceived risk is a consumer's belief in the negative uncertainty of online purchasing (Wu, Chiu & Chen, 2020). Perceived risk is measured by six statement items adopted from (Rahmi, Ilyas, Tamsah, and Munir, 2022). The indicators of perceived risk consist of (1) financial risk, (2) product risk, (3) privacy risk, (4) delivery risk, (5) time risk, and (6) social risk.

Service quality is an assessment of how well a delivered service conforms to the client's expectations (Ramya, Kowsalya, and Dharanipriya, 2019). Service quality is measured using five statement items adapted from Parasuraman, Zeithaml, and Berry, (1988) as well as Naini, Santoso, Andriani, Claudia, and Nurfadillah (2022) namely (1) tangible, (2) empathy, (3) reliability, (4) responsiveness, and (5) assurance. Trust is measured using three statement items. Trust is usually conceptualized as a belief or an expectation built from personal experiences with and contingent on the trustworthiness of others (Paxton and Glanville, 2015). Trust is measured using three statement items consisting of (1) competence, (2) benevolence, and (3) integrity (Firmansyah, Amelia, Faturochman & Minza, 2019). All statement items to measure each variable use a Likert scale (1-5), namely a scale of 1-5, where 1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, and 5 = strongly agree.

4.3 Analysis

Descriptive and inferential statistical methods were used to analyze the data. Descriptive methods explain nominal research variables, such as respondent data, while inferential analysis analyzes the relationship between exogenous and endogenous variables. The inferential analysis uses Structural Equation Modeling (SEM) by SMART-PLS. The stages in SEM analysis are the initial stage of testing the outer model, namely testing whether the research instrument of a questionnaire is valid and reliable. The next stage is testing the inner model to test the suitability of the SEM model in analyzing the relationship between variables. The final stage is testing the research hypothesis and ensuring that the resulting path coefficient is significant or not.

5. Findings

5.1 Respondent Profile

Table 1 shows that the proportion of male and female respondents is balanced. Judging from age, the majority of respondents were aged 21-30 years, which means the majority of respondents came from Generation Z. Most respondents online purchase more than seven times a year or an average of once every 1.7 months they online purchasing. The average value of the majority of online purchasing is under IDR 10,000,000. Meanwhile, the maximum value in one purchase that the majority of respondents dare to do is IDR 1,000,000.

Table 1. Respondent characteristics

Characteristics		Frequency (n)	Percentage (%)
Gender	Male	63	48.8
	Female	66	51.2
Age (years)	< 20	14	11.0
	21-30	70	54.0
	31-40	31	24.0
	41-50	12	9.0
	>50	2	2.0
Purchase frequency/year	<3 times	16	12.4
	4-7 times	29	22.5
	>7 times	84	65.1
Average spending value/year	<IDR 100,000	23	18.0
	IDR 100,001-1,000,000	46	36.0
	IDR 1,000,001-5,000,000	28	22.0
	IDR 5,000,001-10,000,000	20	16.0
Maximum spending value	>IDR 10,000,000	12	9.0
	< IDR 100.000	17	12.0
	IDR 100.001-1.000.000	77	60.0
	IDR 1.000.001-5.000.000	24	19.0
	IDR 5.000.001-10.000.000	9	7.0
	>10.000.000	4	3.0

5.2 Validity and Reliability Test

Determination of the validity test in this study was carried out by looking at the results of the convergent validity (outer model) of each indicator or question given to respondents. The outer model is an evaluation of the tools used to collect research data. If the outer factor value is 0.5 to 0.6, it is considered sufficient or valid (Wiyono, 2011). Researchers used an outer factor value of 0.6 so that it was found that as many as 20 questions were distributed, and 15 questions were declared valid with the outer loading value shown in each indicator worth > 0.6. Meanwhile, the reliability test is carried out by looking at the results of the Composite reliability (two composite reliability measures, coefficient alpha, and coefficient omega, otherwise known as construct reliability) where if the value is > 0.7, the indicators or questions given to respondents are considered reliable (Ghozali, 2014). To ensure that the research instrument is valid and reliable, the researcher choose the highest criterion limit. Based on the results of processing with SmartPLS, the Composite Reliability value of all indicators on the tested variables has a value of > 0.8, so the data obtained has been said to be reliable (Table 2).

Table 2. Validity and reliability

Exogenous Variables	Indicators	Outer loading	Cronbach's alpha	Composite reliability
Service Quality	Tangible	0.669	0.773	0.846
	Empathy	0.731		
	Reliability	0.688		
	Responsiveness	0.792		
	Assurance	0.731		
Trust	Ability	0.876	0.689	0.865
	Integrity	0.871		
Perceived Risk	Privacy risk	0.795	0.56	0.818
	Psychological risk	0.868		

Exogenous Variables	Indicators	Outer loading	Cronbach's alpha	Composite reliability
Online Purchase Decision	Need arousal	0.668	0.779	0.848
	Information Search	0.751		
	Alternatives Evaluation	0.617		
	Purchases	0.769		
	Post-purchase evaluation	0.817		

5.3 Inner Model Test

Table 4 displays an inner model test using R^2 which shows that the resulting SEM model is in the moderate category, both for the endogenous variable perceived risk (0.237) and for the endogenous variable online purchase decision (0.564).

Table 4. Inner Model Test

Endogenous variables	R^2 Value	Category
Perceived risk	0.237	Moderate
Online purchase decision	0.546	Moderate

Thus it can be stated that the resulting structural model has met the criteria for a moderate model. Figure 2 presents the resulting structural model.

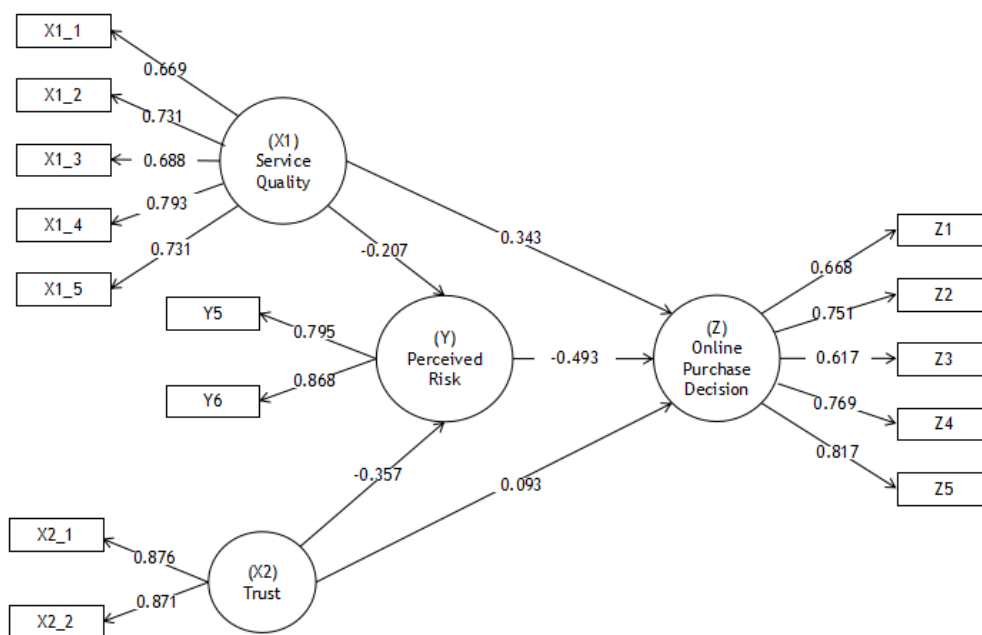


Figure 2. Structural equation model

5.4 Hypothesis Testing Result

The proposed research hypotheses (1, 2, 3, and 5) have been supported by empirical data, except hypothesis number 4. The test criteria use the Probability value (P value), namely, if the p-value is smaller than alpha 5 percent, the research hypothesis is accepted (Table 5).

Table 5. Hypothesis testing for direct Effect

No	Hypothesis	Path coefficient	p-values	Conclusion
1	There is an effect of service quality on perceived risk	-0.2075	0.0081	Accepted
2	There is an effect of service quality on online purchasing decisions	0.3434	0.0000	Accepted
3	There is an effect of trust on perceived risk	-0.3568	0.0000	Accepted
4	There is an influence of trust on online purchasing decisions	0.0930	0.2667	Rejected
5	There is a perceived risk in online purchasing decisions	-0.4928	0.0000	Accepted

Based on Table 5, it is known that all research hypotheses are accepted, except for the fourth hypothesis. This study also found an indirect effect of the service quality variable on online purchasing decisions through perceived risk with a path coefficient of 0.1022 and declared significant. In addition, there is also an indirect effect of trust on online purchasing decisions through perceived risk with a path coefficient of 0.1759 and declared significant as in Table 6.

Table 6. Indirect Effect

No	Hypothesis	Path coefficient	p-values	Conclusion
1	There is an influence of service quality on purchasing decisions through perceived risk	0.1022	0.023	Accepted
2	There is an influence of trust on online purchasing decisions through perceived risk	0.1759	0.0005	Accepted

6. Discussion

The effect of service quality on perceived risk is negative and significant. The higher the quality of online purchasing services, the less risky the purchase will be made by consumers. All dimensions used to measure service quality are valid and reliable and there are only two dimensions of perceived quality that are valid and reliable, namely psychological risk and social risk. The results of this study confirm and strengthen the results of previous studies which show that service quality has a negative effect on risk perception (Aprilia, 2021; Jin & Lim, 2021). The dimensions used to measure perceived risk by Jin and Lim (2021) are personal information leakage risk, technical risk, and monetary risk. Although there are slight differences in measuring perceived risk, it cannot be denied that reducing perceived risk is by improving service quality. In terms of online purchases, marketers can apply e-services as a basis for improving service quality, namely reliability, responsiveness, access, flexibility, ease of navigation, efficiency, assurance, security, price knowledge, site aesthetics, customization/personalization (Indriastuti, Putri, Robiansyah & Anwar, 2022; Nasser, Yusoff, Islam & Nasser, 2014; Pasaribu, Rini & Pujanggoro, 2022; Zeithaml, Parasuraman & Malhorta, 2000).

This research finds that the consumer's trust has had a negative influence on perceived risk. Trust is the source of creating good interpersonal and business relationships (Hakanen, Kossou & Hakala, 2016). Consumers who already have trust in one e-commerce will feel uncomfortable if they have to transact with another e-commerce. So trust can arise due to the minimum risk accepted by a consumer (Yusuf, Gaffar, Hurriyati & Wibowo, 2023). E-commerce buyers will give a rating

to the seller's product or store, the rating can be a sense of trust felt by the buyer towards the store or product being sold. Consistency is needed by sellers so that consumer confidence is maintained and in the end, consumers feel that there will be no risk incurred when making purchases through sellers. This research is in line with previous studies conducted (Ellyawati & Benaditta, 2016; Adiwijaya, Kaihatu, Nugroho, and Kartika, 2017).

Trust has an increasingly important role when consumers carry out the online buying and selling process and greatly influences purchasing decisions. Trust is the basic ingredient in creating long-term relationships between sellers and buyers. Trust is a determining factor for a consumer in determining attitudes toward sellers in e-commerce (Tran & Nguyen, 2022). Consumer trust has a big impact on companies, trust affects consumer behavior and attitudes which result in decision-making (Putra, Rochman & Nurmiyati, 2017). So that the higher the consumer's trust in e-commerce, will increase the consumer purchasing decisions for e-commerce. This study has similar results to previous research conducted by Pautina, Ismail, and Abdussamad, (2022); Karim, Wolok, and Radji (2020); Rabiana and Akib (2020).

Purchasing decisions and actions were taken by consumers when faced with various choices. This action also applies to online purchasing decisions that pay attention to various things, one of which is the quality of service offered by the seller (Naini, Santoso, Andriani, Claudia & Nurfadillah, 2022). Service quality is one of the factors considered by consumers when they want to buy an item online (Wandany, Asdar & Kadir, 2021). Consumers will decide to buy goods or make transactions when the service from the company is good. Good service quality will increase consumer purchasing decisions (Ali, Narulita & Nurmahdi, 2018). The results of this study are in line with previous research conducted (Nawang Sari & Pramesti, 2017). The results of the study show that perceived risk has a negative effect on purchasing decisions. The higher the risk that consumers feel in purchasing, the less the desire to buy products online. This is in line with the research results of Gerber, Ward, and Gerber (2014), as well as Andrian and Selamat (2021).

In this study, researchers included the risk perception variable as a mediator between trust and purchasing decisions, the result is that consumer trust will not affect consumer purchasing decisions without perceived risk. This means that the risks arising from online purchases will be reduced if consumers have high trust in products and sellers in e-commerce so that in the end consumers will continue to purchase the products they dream of through e-commerce. The results of this study contradict the research of Kim, Ferrin, and Rao (2008) who position perceived risk as a mediator between trust and intention to buy. The results of his research show that perceived risk is not a mediator of trust on intention to buy because the direct effect of trust on intention to buy is greater than the indirect effect. One reason that might be the cause of this contradiction is the low level of reliability of the perceived risk variable instrument in Kim, Ferrin, and Rao's (2008) study, so the category cannot be applied, while the reliability of the perceived risk variable instrument in this study is categorized as high (0.818, see Table 2). Finally, the research results show that there is an indirect effect of service quality on purchasing decisions. This means that purchasing decisions can be influenced directly or indirectly by service quality. This is in line with the results of Jayadi and Ariyanti's research (2019).

This study has limitations in using the service quality dimension. The service quality dimension would be more appropriate to use eleven e-services from Zeithaml, Parasuraman, and Malhorta (2000). In addition, the limitations of this study were also in terms of sample size which could have been even larger. In terms of research variables, other variables still need to be added to the model so that the research is more comprehensive.

7. Conclusions

The first hypothesis proposed is that there is an influence of service quality on perceived risk. This hypothesis has been empirically tested and it can be stated that there is a negative effect of service quality on perceived risk. The results of this study have implications for reducing purchase risk by trying to improve every dimension of service quality. The second hypothesis is that there is an influence of service quality on online purchasing decisions. The test results show that the empirical evidence supports the hypothesis. These results have implications for how directly marketers try to improve service quality so that online purchasing decisions increase. Aspects of service quality such as tangible, assurance, responsiveness, reliability, and empathy need to be continuously improved. The third hypothesis proposed is that trust affects perceived risk. Tests show that trust has a negative effect on perceived risk. The implication of these results is to reduce the perceived risk that marketers need to seriously increase consumer trust, especially in the three aspects of trust that are measured, namely the ability to fulfill orders, having integrity, namely fulfilling orders as promised, and marketers having benevolence in dealing with consumers. After testing, the fourth hypothesis was not tested empirically. Thus, it can be stated that there is no influence of trust on online purchasing decisions. Meanwhile, the fifth hypothesis received real empirical support. Thus, it can be stated that there is a negative effect of perceived risk on online purchasing decisions. These results imply that if marketers want to get a direct increase in sales, it is necessary to try to reduce the perceived risk felt by consumers.

The last two hypotheses proposed are (1) there is an influence of service quality on online purchasing decisions through perceived risk, and (2) there is an influence of trust on online purchasing decisions through perceived risk. The two hypotheses are empirically supported and therefore it can be stated that the perceived risk becomes a variable that mediates service quality and trust on purchasing decisions. These two results imply that marketers need to devote serious efforts to reducing the purchase risk perceived by consumers because the perceived risk is a variable that magnifies the influence of the two exogenous variables.

8. Recommendations

The risk perception variable as an intervening variable greatly influences online purchasing decisions. While the exogenous variable that has the greatest influence is trusted with two indicators of ability and integrity. Therefore, marketers need to pay attention to two indicators forming trust which significantly influence risk perception. Marketers need to pay attention to the ability aspect, which is the marketer's ability to meet consumer expectations such as speed of delivery, product quality, ease of ordering, and payment, as a way to increase trust so that the perception of risk is reduced and will ultimately improve online purchasing decisions. Marketers also need to pay attention to aspects of integrity in online sales, such as the absence of orders that do not reach buyers, a physical appearance by promotional images, and other aspects.

Meanwhile, for the aspect of service quality to improve purchasing decisions and reduce perceived risk, marketers can use the e-service (Zeithaml, 2000) concept which consists of 11 dimensions, namely reliability (functional reliability of the website and its accuracy), and responsiveness (quick response to problems faced by consumers), access (easiness for consumers to access the website whenever needed), flexibility (having many ways to make payments, deliveries, and product returns that are not appropriate), ease of navigation (easiness for consumers to find the product information they want on the site, efficiency (simplicity of site design so that it can speed up the process of finding product information), assurance (consumers feel confident about the site's reputation in making transactions), security/privacy (consumers feel that the site they access is free from intrusion and can protect personal data, price knowledge (consumers gain total price information including shipping costs, site aesthetics, customization/personalization (the site allows consumers to be treated personally).

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