

# The Impact of Risk Perception on Customer Purchase Intention in e-Commerce Platform

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## Abstract

**Purpose** – This study aims to investigate the impact of risk perception on online purchase intention in e-commerce platforms.

**Design/Methodology/Approach** – This research uses secondary data analysis and an archival study approach to investigate the impact of risk perception on online purchase intention in e-commerce platforms. The data was gathered from 385 customers using e-commerce platforms. Moreover, this research adopted four frameworks from previous research to construct a new conceptual framework.

**Findings** – This research examined the factors that impact risk perception on online purchase intention in e-commerce platforms. The research's findings revealed that perceived CKM tool risk, social risk, product risk, and delivery risk of customers impact e-commerce platforms.

**Research Limitations/Implications** – There are many limitations to researching the factors influencing customer purchase intention on e-commerce platforms. This research is based in China and uses e-commerce platforms, so this study may not completely apply to people from different cultural backgrounds in other nations.

**Originality/value** - This research is about the important influencing variables that customers perceived CKM tool risk, social risk, product risk, delivery risk, and purchase intention.

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**Keywords** – customer perceived CKM tool risk, social risk, product risk, delivery risk, customer purchase intention

**JEL code classification** – M10, M12, M15

## 1. Introduction

### 1.1 Background of the study

This study aims to investigate the impact of risk perception on online purchase intention in e-commerce platforms. E-commerce is a type of buying and selling activity that takes place over the Internet. Several types of commerce include B2C, B2B, C2C, which is consumer to consumer and C2B, which is consumer to business. An e-commerce platform is a software application on which both sellers and consumers buy and sell goods. Therefore, consumers should be able to use an e-commerce platform to find the products they want, shop using the services of the e-commerce platform, and then check out. With online shopping, the e-commerce platform will use CKM tools to manage the platform and serve customers. Customer Knowledge Management (KM) is the deployment of knowledge management (KM) tools and technologies that companies

use to exchange information with their clients. (Gebert et al., 2005; Rollins & Halinen, 2005; Raleigh, 2002), the perceived risk of transactions on e-commerce platforms is an especially key factor in the reluctance of consumers to purchase transactions on e-commerce platforms. For this reason, researchers should consider exploring whether the perceived risk of various CKM tools affects whether customers are willing to buy products on e-commerce platforms. Therefore, our argument is to use certain CKM tools such as forums, databases, discussion pages, document libraries, workflow applications. On e-commerce platforms. The risks of these network management tools are likely to be perceived by customers. The increased risk perceived by customers may affect their purchase intention.

The misuse of consumers' personal data and the long purchase process led to customer anxiety and the cancellation of transactions. These situations can affect the psychology of customers, who begin to feel that e-commerce is not safe. Therefore, inexperienced people create customers' risk perception (Hong & Cha, 2013). The higher their perception of risk (becomes one of the main barriers for customers to make online purchase decisions. Some studies have also examined how the dimensions of perceived risk influence customer decisions on e-commerce platforms. Therefore, the purpose of this paper is to explore the impact of risk perception on customer purchase intention in e-commerce platform, the impact of CKM tools on customers' willingness to buy and the social risk, product risk, and delivery risk that influence the factors of customers' willingness to buy using e-commerce. In this paper, we examine these factors that affect customer purchase intention

## 1.2 Problem statements

Consumers' perception of e-commerce risk is higher than that of offline businesses (Lee & Tan, 2003). They do not have access to, see, or use the product/service they are about to purchase. For example, e-commerce-based transactions require delivery, and therefore there is a considerable risk of damage, malfunction, delay, or loss during shipping (Hong & Cha, 2013). In addition, customers may be concerned about the misuse of their personal information by other irresponsible parties when purchasing products, thus facing transaction security risks and privacy issues (Zhou et al., 2007). There is theoretical evidence that perceived risks in e-commerce platforms may involve social risks, product risk and delivery risks. All these risks affect customers' willingness to purchase in e-commerce platform. At the same time, certain CKM tools for using and managing websites in e-commerce platforms, such as databases, workflow applications, forums, and these management tools, may cause customers to feel untrustworthy when browsing e-commerce platforms because of their perceived increased risk of using them. Therefore, the purpose of this paper is to explore the risk perception on customer purchase intention in e-commerce platform, and the impact of CKM tools on customers' willingness to use e-commerce to purchase, as well as the social risk, product risk, and delivery risk of factors such as those that affect customers' willingness to purchase products on e-commerce platforms. Companies can use these results to understand the perceived risk affect the customer purchase intention then improve their e-commerce platforms to make consumers trust them more and increase their willingness to purchase.

## 1.3 Objectives of the study

The purpose of this study is to examine and explore the impact of risk perception on customer purchase intention in e-commerce platform. In this study, the researcher will highlight the perceived risk of customers in using e-commerce platforms and its related factors in this study, including the perceived CKM tool risk, social risk, product risk and delivery risk of customers in using e-commerce platforms. The following details will represent the objectives of this study.

This study aims to evaluate and validate the relationships that influence the variables of customer purchase intention:

1. To study the influence of customer perceived risk in the CKM tool on customer purchase intention in e-commerce platforms.
2. To study the influence of social risk on customer purchase intention in e-commerce platform.
3. To study the impact of product risk on customer purchase intention in e-commerce platform.
4. To study the impact of delivery risk on customer purchase intention in e-commerce platform.

#### **1.4 Research questions**

In this study, the research questions have been set up to align with the objectives, as detailed present below:

1. Does the customer's perceived risk associated with each CKM tool significantly impact customer purchase intention on the e-commerce platform?
2. Does social risk significantly impact customer purchase intention in e-commerce platforms?
3. Does product risk significantly impact customer purchase intention in e-commerce platforms?
4. Does delivery risk significantly impact customer purchase intention in e-commerce platforms?

#### **1.5. Significance of the study**

In recent years, the number of people using e-commerce platforms for shopping has increased dramatically. The competition among e-commerce platforms is very fierce, and each e-commerce platform wants to attract customers. Fore-commerce platform, customers' willingness to buy is especially important. Customers trust e-commerce platform and make purchases, which can increase the profit of the platform, and secondly, customers use e-commerce platforms and tell their friends which can improve the reputation of the e-commerce platform. This study aims to investigate the impact of risk perception on customer purchase intention in e-commerce platform, to make the e-commerce platform environment safer, and to enable e-commerce platform to know how to better manage their e-commerce platforms to better attract customers. Therefore, improving e-commerce services and increasing customers' willingness to buy is particularly important for the improvement of business performance. Therefore, the purpose of this study is to identify the impact of risk perception on customer purchase intention in e-commerce platform. Firstly, the results of this study will help e-commerce platforms to understand the factors affecting customers' purchase intention by risk perception of e-commerce platforms. In addition, this study may help e-commerce platforms to develop strategies to increase customers' purchase intention. In addition, this study will also benefit the researcher's future research on customers' perception risk on e-commerce platforms' purchase intention.

#### **1.6 Scope of the study**

This study examines The Impact of risk perception on customer purchase intention in e-commerce platforms. Secondary data and information from earlier research articles were used to perform this study. In this paper, a hypothesis and conceptual framework was constructed based on the correlation between variables by combining the quantitative framework of previous studies. Therefore, the purpose of this study is to explore the impact of risk perception on customer purchase intention in e-commerce platforms.

#### **1.7 Definitions of the Study**

##### **1.7.1 Online CKM tools**

In this study, CKM tools are tools to manage websites. Through CKM web applications, organizations can gain important knowledge and improve customer service, such as enterprise CKM work. The most common web tools are databases, information bases, workflow applications, and forums

##### **1.7.2 Social Risk**

In this study, social risk is defined as the potential privacy concerns that consumers use to purchase from a website.

### **1.7.3 Product Risk**

In this survey, product risk is defined as the risk of consumers buying products with after-sales service, inferior quality products, and counterfeit products.

### **1.7.4 Delivery Risk**

In this case, delivery risk is defined as the risk of product disappearance and product damage during delivery after online shopping.

### **1.7.5 Perceived Value**

In this study, perceived value is defined as the ability of customers to perceive the quality of products and services, and to perceive whether businesses meet their needs and expectations.

### **1.7.6 Purchase Intention**

In this study, purchase intention is defined as consumers satisfied with products and services choose to buy products

## **2. Literature Review And Hypotheses Development**

### **2.1 Theories related to each variable**

#### **2.1.1 CKM tools**

According to [Shami \(2008\)](#) customer knowledge management is a concept of organizing, planning leading and controlling manageable customer knowledge according to a study from [Borges et al. \(2007\)](#) the management of knowledge is particularly important and companies that invest in the Internet use it to manage basic information about their customers. According to [Zhang and Huang \(2002\)](#) through the web application of CKM, organizations can gain important knowledge that adds more dimensions to the company to create marketing development activities and improve the quality of services. According to [Kolbe and Geib \(2005\)](#) CKM tools are an integration of knowledge management and customer relationship management required to manage the collection, storage and distribution of relevant knowledge According to [Gebert et al. \(2003\)](#) CKM is achieved by managing the acquisition, storage, and distribution of relevant knowledge, which requires the integration of knowledge management and customer relationship management activities. According to [Romano and Fjermestad \(2003\)](#) CKM tools can help e-commerce platforms understand customer needs.

#### **2.1.2 Perceived risk in CKM tools**

The purpose of this study is to explore the perceived risks of customers purchasing specific items in the context of previous traditional offline shopping and now online shopping. Based on previous research from [Bauer \(1960\)](#), Consumer behavior involves a high probability of risk, because any behavior of consumers will have consequences that they cannot estimate. In other words, according to [Mitchell \(2001\)](#) Consumer perceived risk refers to the amount of money lost when the consequences of a certain behavior are bad, which can combine with the individual's subjective feeling that the consequences of the behavior may be bad. So according to these definitions, it can assume that the risk is related to the location where the product can provide and where it provided, and the place where the risk arises in the e-commerce retail channel is the e-commerce platform.

According to [Cases \(2002\)](#), the presence of a database containing product information and stored information on an e-commerce platform may reduce customers' ability to perceive product risk, while access to online documents that clearly disclose security and privacy policies may reduce consumers' perceived risk of privacy ([Doolin et al., 2005](#)). One of the most important dimensions in e-commerce platform is the perceived risk dimension. Also, [Chen and Accredi \(2005\)](#) came to a similar conclusion that the use of other CKM tools on e-commerce platform may increase the complexity of the e-commerce platform and the risk perception of the platform users, such as shared databases. Hackers can gain access to basic and confidential information about customers, allowing them to provide confidential data to all insiders without their knowledge. [Conchar et al.](#)

(2004) found that in such cases, users perceive the use of these e-commerce platform as insecure and believe that the use of hosted shared databases makes the platform riskier. In this case, users mostly perceive a higher level of risk when using e-commerce platform with CKM tools.

### **2.1.3 Social risk**

According to James and Javier (2017) there is a degree of risk in making a purchase decision regarding the buyer's choice of possible negative consequences in the face of uncertainty in the purchase process. Also, the study by Lee and Tan (2003) shows that consumers perceive higher risk in e-commerce than in offline business. According to Li and Zhang (2002), social risk refers to people's perceived risk of purchasing a product that may lead to disapproval from family or friends. In addition, Stone and Gronhaug (1993), Jacoby and Kaplan (1972) also showed that when customers choose to buy a product due to incomplete shopping experience in an e-commerce platform resulting in lack of knowledge about the product, this creates a risk, which can lead to a potential loss of status of the user in the group. This may lead to opposition from family and friends if the product is purchased without knowledge of the product's characteristics.

### **2.1.4 Product risk**

According to Chang et al. (2016), shopping for purchases on e-commerce platforms has a higher level of confusion and risk than shopping in traditional stores. Product risk is that the products consumers purchase may not work as initially expected (Kim et al., 2008). That is, it is the ability of a product to perform its essential functions and deliver value as promised (Jacoby & Kaplan, 1972). On the other hand, according to Hong and Cha (2013) study illustrates that since buying in e-commerce platforms, customers are very prone to risk because they cannot see, touch or try the product/service they are about to buy. The study by Jitendra and Daisy (2017) also showed the situation that consumers usually encounter when buying goods on e-commerce platform, they are worried about whether the product they are buying is genuine, whether the product they are buying is free from defects and customers are worried that the product may not match the image of the product displayed on thee-commerce platform (Peter & Ryan, 1976).

### **2.1.5 Delivery risk**

Delivery risk is the possibility of occurring loss or breakage during the delivery process. Internet-based transactions require delivery, so there is a high chance of damage, failure, delay, or loss during shipping (Hong & Cha, 2013). According to Noorshella et al. (2019), the study profounded that customers are afraid of shopping online because they may feel disappointed or frustrated if the product does not meet their expectations. According to Dan et al. (2007), potential delivery losses found to be the loss of goods, damage to goods and delivery to the wrong location after shopping. Also, the study by Claudia (2012) illustrated that consumers are concerned that delivery will be delayed due to various circumstances; the courier company will not deliver the goods within the period agreed with the customer or consumers are concerned that the goods may be damaged during handling and transportation or not properly packed and managed during transportation.

## **2.2 Related literature review**

### **2.2.1 Perceived risk associated to each CKM tool**

According to Shim et al. (2001) study the reasons why consumers choose to forgo the purchase of a product usually include unwillingness to provide technical problems with thee-commerce platform, personal privacy information and credit card payment information, and ambiguity in product positioning. In fact, Mitchell (2001) showed that the perceived risk of remote shopping affects the related shopping behavior of customers. Also, the perceived risk associated with e-commerce platform shopping reduces consumers' perceptions of their own behavior and control over the external environment, which can lead to a negative impact on their

use of e-commerce platform shopping (Forsythe & Shi, 2003). The subject of this study is that hosting CKM tools such as forums, data repositories, documents, workflow applications on an e-commerce platform may increase the risk of the platform and in turn reduce the willingness of customers to purchase on the e-commerce platform. Based on these theories, we can propose the following hypotheses.

**H1a:** *The customer's perceived risk associated with each CKM tool has no significant impact on customer purchase intention in e-commerce platforms.*

### 2.2.2 Social risk, product risk, and delivery risk

The concept of risk has been accepted as one of the main considerations in customer decision making. According to Bauer (1960), perceived risk has a negative effect on the willingness to buy in e-commerce platform. Risk is subjective, meaning that the likelihood of customers suffering a loss is influenced by their lack of experience and relevant knowledge at the time of decision making. The more risk they perceive, the lower their willingness to execute a purchase.

According to the risk dimensions proposed by Muhammad (2016), we can know that customers are influenced by these risks in their decision making when purchasing products in e-commerce platforms. Social risk is defined as the product purchased on an e-commerce platform that affects others' perceptions and evaluations of the consumer. Product risk is defined as the possibility that the product purchased in the e-commerce platform does not perform as expected by the consumer. Delivery risk defined the possibility that a product may lost during delivery after a consumer purchase it on an e-commerce platform.

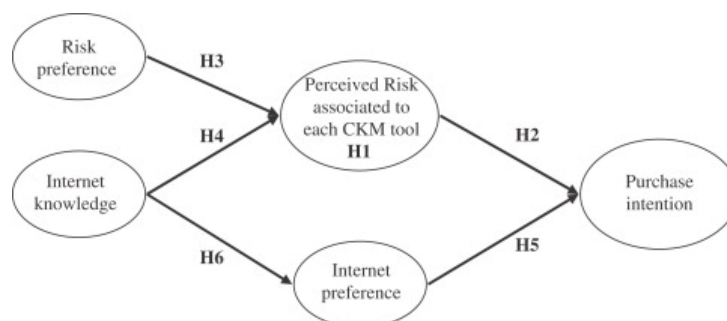
Based on the literature study, the researchers hypothesized that the following dimensions of perceived risk are present for e-commerce platform consumers: social risk, product risk, and delivery risk. The dimensions listed above are our measures of consumers' perceived risk in e-commerce platforms.

**H1b:** *Social risk has no significant impact on customer purchase intention in e-commerce platforms.*

**H1c:** *Product risk has no significant impact on customer purchase intention in e-commerce platforms.*

**H1d:** *Delivery risk has no significant impact on customer purchase intention in e-commerce platforms.*

### 2.3 Theoretical frameworks



**Figure 1:** Characteristics of perceived risks and users to elucidate the variables that influence consumers' willingness to buy online

**Source:** Carolina and Francisco (2008), Customer Knowledge Management and E-commerce: The role of customer perceived risk

Carolina and Francisco (2008) aimed to deepen customers' understanding of the customer knowledge management (CKM) tools in an electronic commerce environment in figure 1. They drew a sample of 276 undergraduate students of different majors from a large university. The sample chosen to select these

undergraduates who will focus on the future development of their business and who are familiar with the types of tools that have a key role in this study for customers of the Internet. The variables in this study were administered using several item scales that have been previously evaluated in research. This study extends the literature to determine whether perceived risk in relation to certain CKM tools has an impact on customers' purchase intentions in an online environment. On the other hand, website executives should consider the impact of using certain CKM programs on their websites, as this may have a significant impact on how customers perceive the website or the eventual sale. The empirical results suggested that there is indeed a significant link between knowledge management and e-commerce, and that this link is also present in customer perceived risk.



**Figure 2:** This study aims to examine Indonesian consumers' purchase intention in terms of perceived risk (financial, social, time, product, payment and privacy, and after-sales risk).

**Source:** Muhammad (2016), The Impact of Perceived Risk on Consumer Purchase Intention in Indonesia; A Social Commerce Study

Muhammad (2016) sought to the analysis and study the important the seven dimensions of Perceived Risk of Purchase Intention in E-Commerce in figure 2. This study used an electronic questionnaire and received responses from 248 users in Indonesia who have experience and knowledge of e-commerce. 175 respondents were considered appropriate and met the criteria. The purpose of this study is to predict and develop the theory of e-commerce, so the most suitable analytical method to explain the relationship between excoriates in this study is SEM (Structural Equation Modeling)-PLS (Partial Least Squares) (Bacon, 1999). The purpose of this study is to predict and develop the theory of e-commerce, so the most suitable analytical method to explain the relationship between excoriates in this study is SEM (Structural Equation Modeling)-PLS (Partial Least Squares). This study reviewed the impact of perceived risk dimensions (time, financial, social, delivery, product, payment and privacy, and post-sale risk) on business customers' purchase intention in Indonesia (Bacon, 1999).

### 2.4 Hypothesis Development

In this study, four research hypotheses used to explain the conceptual framework of the impact of risk perception on customer purchase intention in e-Commerce platform in figure 3 described below.

The hypotheses proposed in this paper are as followed:

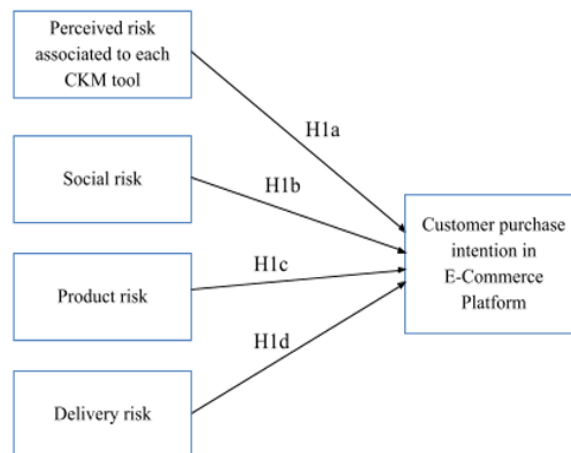
**H1a:** The customer's perceived risk associated with each CKM tool has no significant impact on customer purchase intention in e-commerce platforms.

**H1b:** Social risk has no significant impact on customer purchase intention on e-commerce platforms.

**H1c:** Product risk has no significant impact on customer purchase intention in e-commerce platforms.

**H1d:** Delivery risk has no significant impact on customer purchase intention in e-commerce platforms.

## 2.5 Conceptual framework



**Figure 3:** The conceptual framework of the impact of risk perception on customer purchase intention in e-Commerce platform

**Source.** Constructed by the author.

## 3. Research Methodology

### 3.1 Research Design

The purpose of this study is to examine the factors affecting risk perceptions influencing customers' purchase intention determinants on e-commerce platforms, including CKM tool risk perceptions, social risk, product risk, and dispatch risk. In addition, this study will assess the extent to which risk perception affects customers' willingness to purchase on e-commerce platforms. Since this study is a quantitative study, Alpha, multiple linear regression, simple linear regression, and descriptive statistical methods were used to analyze the results of this study.

The questionnaire is divided into three sections with twenty-five questions related to six research model variables, three items related to screening questions, sixteen questions related to measurement variables, and six items related to demographic information.

Firstly, this study used Cronbach's Alpha to determine the reliability of the questionnaire and whether there was any ambiguity or confusion in the items measured in the questionnaire. A small sample of thirty people use in the pilot to ensure the reliability of the questionnaire and to see if there was any uncertainty about the items measured in the questionnaire. Secondly, this study uses multiple linear regression (MLR) to analyze the risk perception factors affecting the purchase intention of e-commerce platform consumers consisting of CKM tool risk perception, social risk, product risk, and delivery risk.

In addition, this study used secondary data, with most of the information coming from reliable sources, including articles, journals, and previous studies.

### 3.2 Sampling Plan

#### 3.2.1 Target Population

In this study, the target group is people who live in China and have purchased products on e-commerce platforms. According to the data of the seventh national census of the People's Republic of China, the



population of thirty-one provinces, autonomous regions, municipalities, and active military personnel in Chinese mainland is 1,411,778,724, accounting for about 18% of the world's total population, making it the world's most populous country. Source from - Bulletin of the Seventh National Population Census (National Bureau of Statistics).

### 3.2.2 Sample size

To estimate the sample size of a limited population, this study used the table Krejcie and Morgan (1970). The sample size for this study was 384 respondents of Chinese nationality who lived in China and used e-commerce software to purchase products at least once, based on China's estimated population of 1.4 billion. According to the sample size scale of Krejcie and Morgan (1970), the appropriate sample size for this study is 384 people. As the population grows, the number of samples continues to decrease. Therefore, the researchers believe that 384 samples are sufficient to use.

### 3.2.3 Sampling procedure

In this study, the researchers will pre-screen the respondents according to the research purpose, so the non-probability sampling methods of convenience sampling and snowball sampling to collect information. In this study, the researchers chose to use a non-probability sampling strategy due to the limited time available and the need to maintain social distancing. Therefore, this method is the most suitable method because researchers can easily collect data.

## 3.3 Research tools

### 3.3.1 Research tools/questionnaire design

The research tool of this study was a questionnaire to assess the relationship between significant factors and variables. The researchers distributed questionnaires to eligible samples through the Internet. The researcher divided questionnaire into three parts. The first part includes screening questions, which will only be answered by people who live in China and purchase products using e-commerce platforms. The second part is about the demographic information of the respondents. The last part is the dependent variable and independent variable items, including twenty-four scale items.

## 3.4 Validity

### 3.4.1 Content Validity of Item-Goal Consistency Indicators

The researchers assessed item quality for each question in the questionnaire using the Item Objective Consistency (IOC) metric. To obtain the content validity score, the researchers solicited opinions from 3 experts. The IOC value is 0.67. All questions are suitable for distribution to respondents as the results score are above 0.5.

### 3.4.2 Cronbach's Alpha Reliability with pilot test

In this study, a pilot test was administered to 30 people, which allowed to understand whether there were any discrepancies or deficiencies in the variables in the questionnaire. Cronbach's alpha is a method, which can quantify the consistency, which is used to assess the reliability of any measured variable. Referring to Cronbach (1951), reliability is usually tested using a pilot test study method, using Cronbach's alpha (CA) as a common premise. Since it uses a 5-point Likert scale to determine the overall items, Hoshi and Erford (2017) suggested that Cronbach's Alpha is the most acceptable reliability test for this study before sending it to the target audience. The range and correlation strength of alpha coefficients are shown in table 2.

**Table 2** the Alpha Coefficient range by Cronbach (1951)

Alpha Coefficient Range	Strength of Association
$\alpha > 0.9$	Excellent
$0.8 < \alpha < 0.9$	Good
$0.7 < \alpha < 0.8$	Acceptable
$0.6 < \alpha < 0.7$	Questionable
$0.5 < \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable

Cronbach's alpha values for the independent variables: perceived risk associated to each CKM tools, social risk, product risk, delivery risk, and customers' purchase intention on e-commerce platforms for each CKM tool were obtained through a pilot test with 30 participants. The result showed the overall variables of the factors that Influencing of risk perception on customer purchase intention in e-commerce platform consist of 5 items. The outcome shown that the Cronbach's alpha for perceived risk associated to each CKM tool of 4 items is .868, the 3 items of social risk is .950, the 3 items of product risk is .846, the 3 items of delivery risk is .755, the 3 items of customer purchase intention in the e-commerce platform is .751 (Per shown in Table 3). The results provide support for the internal consistency of the constructs and indicate that the questionnaire is sufficiently reliable to be used repeatedly based on the rule of thumb that the value must be above 0.60 to be considered acceptable.

**Table 3:** The Value of Reliability Analysis of Each Item and Variable in this Study (n=30)

Items No.	Measurement Items	Cronbach's Alpha	Strength of Association
<b>Perceived risk associated to each CKM tool (CKM)</b>			<b>0.868</b>
CKM1	With the CKM tool on the e-commerce platform, my purchase order might not be processed properly on e-commerce platform.	.880	Good
CKM2	With the CKM tool on e-commerce platform, my personal information may be disclosed if I buy products.	.810	Good
CKM3	With the CKM toll on e-commerce, there will be misleading, financially and socially damaging information platforms.	.825	Good
CKM4	With the CKM tool on e-Commerce, the management tools may cause my product delivery to be delayed.	.817	Good
<b>Social risk (SR)</b>			<b>0.950</b>
SR1	If I purchased a product on an e-commerce platform, I would not be encouraged by my friends or family.	.922	Excellent
SR2	If I buy a product from an e-commerce platform, I may receive many complaints from my family or friends	.920	Excellent
SR3	Family and friends would disapprove of the products I purchase on an e-commerce platform.	.938	Excellent
<b>Product Risk (PR)</b>			<b>0.846</b>

PR1	When I buy products on an e-commerce platform, the product I receive may not be of excellent quality.	.858	Good
PR2	When I buy products in e-commerce platform, the products I receive may be counterfeit products	.739	Acceptable
PR3	When I buy products in e-commerce platform, the products I receive may not match the advertisements I see	.757	Acceptable
<b>Delivery Risk (DS)</b>			<b>0.755</b>
DR1	If I buy a product on an e-commerce platform, the product may be destroyed in transit	.713	Acceptable
DR2	If I buy a product in e-commerce platform, it may get lost in transit	.817	Good
DR3	If I buy a product in e-commerce platform, it may be sent to the wrong place	.710	Acceptable
<b>Customer purchase intention in the e-commerce platform (PI)</b>			<b>0.751</b>
PI1	I would like to purchase a product from an e-commerce platform.	.713	Acceptable
PI2	I would like to recommend my friends or family to purchase a product from an e-commerce platform.	.810	Good
PI3	If there is a product that I want to purchase, I would like to use the e-commerce platform.	.880	Good

### 3.5 Methods of Data Gathering and Procedures

In this study, data were collected from primary and secondary data. Researchers obtain primary data directly from respondents through surveys. Primary data were considered a reputable source because the information was initially obtained from the respondents who were the target of established criteria related to the research topic. The respondent is treated as a target under a given criterion related to the topic of the study. For the raw data, the questionnaire collected the raw data from people who live in China and have used e-commerce platforms to purchase products. In addition, when collecting the raw data, respondents were asked to rate their experience on a five-point Likert scale to assess the impact of risk perception on online purchase intention in e-commerce platforms. In addition, the researchers used a non-probability sample method to collect data, utilizing convenience sampling and snowball sampling methods. Respondents were first screened according to the study objectives, and the researchers distributed the online survey to the researchers' acquaintances. Acquaintances who completed the survey then helped distribute the survey to their friends and family, which was convenient for the researcher. In addition, researchers use data from secondary sources or papers obtained earlier and used to construct conceptual frameworks, hypotheses, sample sizes, data analysis, conclusions, and recommendations.

## 4. Data Analysis And Discussion Of Results

### 4.1 Reliability Testing

The researchers decided to re-examine the questionnaires of all 385 respondents to see if there were any inconsistencies or errors. Whether there were inconsistencies or errors in the variables for all 385 respondents. Cronbach's Alpha reliability test was used to assess and analyze the reliability of the questionnaire for 385 respondents as shown in Table 4.

**Table 4:** The value of Reliability Analysis of Each Item and Variable in this Study

Items No.	Measurement Items	Cronbach's Alpha	Strength of Association
<b>Perceived risk associated to each CKM tool (CKM)</b>			<b>0.930</b>
CKM1	With the CKM tool on the e-commerce platform, my purchase order might not be processed properly on e-commerce platform.	.879	Good
CKM2	With the CKM tool on e-commerce platform, my personal information may be disclosed if I buy products.	.922	Excellent
CKM3	With the CKM toll on e-commerce, there will be misleading, financially and socially damaging information platforms.	.932	Excellent
CKM4	With the CKM tool on e-Commerce, the management tools may cause my product delivery to be delayed.	.897	Good
<b>Social risk (SR)</b>			<b>0.850</b>
SR1	If I purchased a product on an e-commerce platform, I would not be encouraged by my friends or family.	.817	Good
SR2	If I buy a product from an e-commerce platform, I may receive many complaints from my family or friends	.726	Acceptable
SR3	Family and friends would disapprove of the products I purchase on an e-commerce platform.	.762	Acceptable
<b>Product risk (PR)</b>			<b>0.843</b>
PR1	When I buy products on an e-commerce platform, the product I receive may not be of excellent quality.	.695	Questionable
PR2	When I buy products in e-commerce platform, the products I receive may be counterfeit products	.656	Questionable
PR3	When I buy products in e-commerce platform, the products I receive may not match the advertisements I see	.796	Acceptable
<b>Delivery Risk (DR)</b>			<b>0.881</b>
DR1	If I buy a product on an e-commerce platform, the product may be destroyed in transit	.810	Good
DR2	If I buy a product in e-commerce platform, it may get lost in transit	.835	Good

DR3	If I buy a product in e-commerce platform, it may be sent to the wrong place	.850	Good
<b>Customer purchase intention in the e-commerce platform (PI)</b>			<b>0.829</b>
PI1	I would like to purchase a product from an e-commerce platform.	.642	Questionable
PI2	I would like to recommend my friends or family to purchase a product from an e-commerce platform.	.802	Good
PI3	If there is a product that I want to purchase, I would like to use the e-commerce platform.	.799	Acceptable

Table 4 shows how the researcher used Cronbach's Alpha to determine the closeness between a set of question items, using the SPSS program to measure the reliability scale. The results show that the overall variable for the factor of the Impact of Risk Perception on Customer Purchase Intention in e-Commerce Platform is 5 entries. The results showed that all factors were valid and reliable with values greater than 0.7, indicating that all factors were reliable. The highest reliability was customer risk perception of CKM tool with 0.930 for four question items, followed by repeat delivery risk with 0.881 for three question items, social risk with 0.850 for three question items, product risk with 0.843 for three question items, and customer purchase intention with 0.829 for three question items.

#### 4.2 Descriptive Analysis of Demographic Data

Using descriptive analysis in an SPSS program, researchers assessed the demographics of respondents who use e-commerce platforms in China. The researchers collected statistical information on gender, age, current monthly income, frequency of using e-commerce platforms, perceived level of risk on e-commerce platforms, and reasons for using e-commerce platforms. The researchers used descriptive analysis to interpret the characteristics of the respondents.

Table 5 shows the frequency distribution and percentage in sample size of 385 respondents are as follows:

**Gender:** From 385 respondents, 31.7% were male respondents, while 68.3% were female respondents. Results for male and female respondents among the respondents, 122 were male and 263 were female.

**Age:** Most respondents in this study were between 18 and 40 years old, with 278 respondents, accounting for 72.2%; 35 respondents were between 40 and 60 years old, accounting for 9.1%; 66 respondents were under 18 years old, accounting for 17.7%; and the age group over 60 years old has the lowest percentage of respondents at 1.5% with 6 respondents.

**Current monthly income:** 158 out of 385, accounting for 41.1%, have a monthly income between 5,000 and 10,000 RMB, followed by 64 respondents with a monthly income between 3,000 and 5,000 RMB, accounting for 16.9%, 58 respondents with a monthly income below 3,000 RMB, accounting for 15.1%, 68 respondents with no monthly income, Accounting for 17.7%, the highest number of respondents with more than 10,000 RMB is 37, accounting for 9.6%.

**Frequency of purchases on e-commerce platforms:** Among the 385 respondents, 148 respondents, accounting for 38.4%, use e-commerce platforms to buy products 2-3 times a week, followed by 140 respondents, accounting for 36.4%, who use e-commerce platforms 7-8 times a month, and 71 respondents, accounting for 18.4%, who use e-commerce platforms 2-3 times a month. The number of respondents who use e-commerce platforms daily is 6.8%, accounting for 26, the lowest.

**Worry about the risks of e-commerce platforms:** From the total of 385 respondents, 146 respondents who were frequently worried about risk with 37.9%, follow by 156 respondents who were occasionally worried about risk with a percentage of 40.5%, 83 respondents who were never worried about risk accounted for 21.6%.

**Features of e-commerce platforms to attract customers:** Among all 385 respondents, 134 respondents with 34.8% feeling that products prices are very low, following by 133 respondents, there are many different types of e-commerce platforms available with a percentage of 34.5%, 58 respondents thought e-commerce platforms had good product quality, accounting for 15.1%, while 60 respondents who thought e-commerce platforms provided excellent after-sales services accounted for 15.6 %.

**Table 5.** Demographic factors using the frequency distribution and percentage

<b>Demographic Factors (n = 385)</b>	<b>Frequency</b>	<b>Percent</b>
<b>Gender</b>		
Male	263	61.3
Female	122	31.7
<b>Total</b>	385	100
<b>Age</b>		
Under 18 years old	66	17.7
18 – 40 years old	278	72.2
40– 60 years old	35	9.1
Over 60 years old	6	1.5
<b>Total</b>	385	100
<b>Current monthly income</b>		
No income	68	17.7
Less than 3000 RMB	58	15.1
3000-5000 RMB	64	16.9
5000-10000 RMB	158	41.1
More than ten thousand RMB	37	9.6
<b>Total</b>	385	100
<b>Frequency of purchases on e-commerce platforms:</b>		
Every day	26	6.8
Two to three times per week	148	38.4
Two to three times per month	71	18.4
Seven to eight times per month	140	36.4
<b>Total</b>	385	100
<b>Worry about the risks of e-commerce platforms</b>		
Often worry about risk	146	37.9
Occasionally worry about risk	156	40.5
Never worried about risk	83	21.6
<b>Total</b>	385	100
<b>Features of e-commerce platforms to attract customers</b>		

Products prices is exceptionally low	134	34.8
Many diverse types available	133	34.5
Excellent quality products	58	15.1
Provide excellent after-sales service	60	15.6
<b>Total</b>	385	100

### 4.3 Mean and Standard Deviation for Descriptive Analysis

In this section, the summary of the Mean and Standard Deviation for each group variable, including perceived risk associated to each CKM tool, Social risk, product risk, delivery risk, customer's purchase intention on e-commerce platform. The following criteria for evaluating the mean scores were adapted from Moidunny (2009) and are detailed below:

The criteria of the interpretation of mean scores

Mean score	Interpretation
4.21 – 5.00	Very high
3.21 – 4.20	High
2.61 – 3.20	Medium
1.81 – 2.60	Low
1.00 – 1.80	Very low

#### 4.3.1 Mean and standard deviation of perceived risk associated to each CKM tool

Table 6 indicated that the highest mean of perceived risk associated to each CKM tool was “With the CKM tool on the e-commerce platform, my purchase order might not be processed properly on e-commerce platform” which is equals 4.23. On the contrary, the lowest mean was “With the CKM toll on e-commerce, there will be misleading, financially and socially damaging information platforms.” which equals 3.35. On the other hand, the “With the CKM tool on e-commerce platform, my personal information may be disclosed if I buy products” which equals to 3.41. In addition, the highest standard deviation was “With the CKM tool on e-Commerce, the management tools may cause my product delivery to be delayed.” which is equals to 1.13.

**Table 6:** The result of Mean and Standard Deviation of perceived risk associated to each CKM tool

Perceived risk associated to each CKM tool	Mean	Std. Deviation	Interpretation
<b>CKM1:</b> With the CKM tool on the e-commerce platform, my purchase order might not be processed properly on e-commerce platform.	4.23	1.03	Very high
<b>CKM 2:</b> With the CKM tool on e-commerce platform, my personal information may be disclosed if I buy products.	3.41	1.03	High
<b>CKM3:</b> With the CKM toll on e-commerce, there will be misleading, financially and socially damaging information platforms.	3.35	0.996	High
<b>CKM4:</b> With the CKM tool on e-Commerce, the management tools may cause my product delivery to be delayed.	3.43	1.13	High

#### 4.3.2 Mean and standard deviation of Social Risks

Table 7 indicated that the highest mean of social risk was "If I purchased a product on an e-commerce platform, I would not be encouraged by my friends or family "which is equals to 3.65. However, the lowest mean was "Family and friends would disapprove of the products I purchase on an e-commerce platform" which equals 3.26. Furthermore, the "If I buy a product from an e-commerce platform, I may receive many complaints from my family or friends." Standard deviation, which equals to 0.897.

**Table 7:** The result of Mean and Standard Deviation of social risk

Social risk	Mean	Std. Deviation	Interpretation
<b>SR1:</b> If I purchased a product on an e-commerce platform, I would not be encouraged by my friends or family.	3.65	1.11	High
<b>SR2:</b> If I buy a product from an e-commerce platform, I may receive many complaints from my family or friends	3.43	0.865	High
<b>SR3:</b> Family and friends would disapprove of the products I purchase on an e-commerce platform.	3.26	1.09	High

**4.3.3 Mean and standard deviation of product risk**

Table 8 indicated that the highest mean of product risk was "When I buy products on an e-commerce platform, the product I receive may not be of excellent quality "which is equals to 3.50. However, the lowest mean was "When I buy products in e-commerce platform, the products I receive may not match the advertisements I see "which equals 3.25. Furthermore, the mean of "When I buy products in e-commerce platform, the products I receive may be counterfeit products "which equals to 3.44.

**Table 8:** The result of Mean and Standard Deviation of product risk

Product risk	Mean	Std. Deviation	Interpretation
<b>PR1:</b> When I buy products on an e-commerce platform, the product I receive may not be of excellent quality.	3.50	1.02	High
<b>PR2:</b> When I buy products in e-commerce platform, the products I receive may be counterfeit products	3.44	0.969	High
<b>PR3:</b> When I buy products in e-commerce platform, the products I receive may not match the advertisements I see	3.25	0.850	High

**4.3.4 Mean and standard deviation of delivery risk**

Table 9 indicated that the highest mean of delivery risk was "If I buy a product on an e-commerce platform, the product may be destroyed in transit "which is equals to 3.56. However, the lowest mean was "If I buy a product on the e-commerce platform, it may be sent to the wrong place. "Which equals 3.25. Furthermore, the mean of " If I buy a product on the e-commerce platform, it may get lost in transit "which equals to 3.39.



**Table 9:** The result of Mean and Standard Deviation of delivery risk

Delivery risk	Mean	Std. Deviation	Interpretation
<b>DR1:</b> If I buy a product on an e-commerce platform, the product may be destroyed in transit	3.56	1.01	High
<b>DR2:</b> If I buy a product on the e-commerce platform, it may get lost in transit.	3.39	1.02	High
<b>DR3:</b> If I buy a product on the e-commerce platform, it may be sent to the wrong place.	3.25	1.02	High

**4.3.5 Mean and standard deviation of customer purchase intention in the e-commerce platform**

Table 10 indicated that the highest mean of customer purchase intention in the e-commerce platform was “I would like to purchase a product from an e-commerce platform “which is equals to 3.75. However, the lowest mean was “I would like to recommend my friends or family purchase a product from an e-commerce platform. "Which equals 3.29. Furthermore, the mean of "If there is a product that I want to purchase, I would like to use the e-commerce platform “which equals to 3.34.

**Table 10:** The result of Mean and Standard Deviation of customer purchase intention in the e-commerce platform

Customer purchase intention in the e-commerce platform	Mean	Std. Deviation	Interpretation
<b>PI1:</b> I would like to purchase a product from an e-commerce platform.	3.75	1.24	High
<b>PI2:</b> I would like to recommend my friends or family purchase a product from an e-commerce platform.	3.29	0.833	High
<b>PI3:</b> If there is a product that I want to purchase, I would like to use the e-commerce platform.	3.34	0.927	High

**4.4 Hypothesis Testing Results**

In this study, there are four components of hypothesis testing.

- B = Unstandardized coefficients B
- SE B = the standard error for the unstandardized beta
- $\beta$  = the standardized beta; Beta or  $\beta$
- t = t statistic; t-value
- Sig. = p-value
- VIF = Variance Inflation Factor

In this section, the researchers utilized multiple linear regression as a statistical analytical approach to examine whether The Impact of risk perception, social risk, product risk, Delivery risk have significantly impact on customer purchase intention in e-commerce platform. With the use of multiple linear regression, the R-square value can be used to analyze a variable, which displays the proportion of variance in the dependent variable based on the independent variable. The researcher also employed multiple linear regression as a statistical analysis method to evaluate the level of multiple factors that can impact on customer loyalty. Multiple linear regression is employed, multi-collinearity should be computed to indicate, which variables should be removed.

In addition, According to Hair et al. (1995), when the relationship among the independent variables is moderate, the value of variance inflation factor (VIF) can be as high as "10," which is acceptable and classified as moderate multi-collinearity. Furthermore, the R-square ( $R^2$ ) value, which shows the proportion of variance in the dependent variable based on the independent variable, can be used to explain the variable.

**4.4.1 Result of Multiple Linear Regression of H1**

**Statistical hypothesis H<sub>1</sub>**

Ho: The customer's perceived risk associated with each CKM tool (H1a), social risk (H1b), product risk (H1c), and delivery risk (H1d) have no significant impact on customer purchase intention in e-commerce platforms.

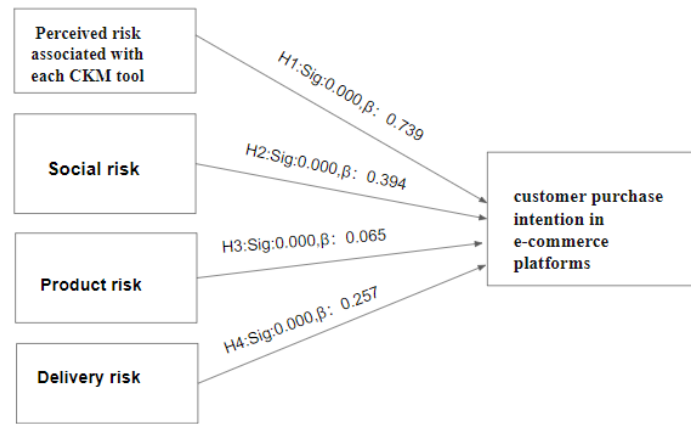
Ha: The customer's perceived risk associated with each CKM tool (H1a), social risk (H1b), product risk (H1c), and delivery risk (H1d) have a significant impact on customer purchase intention in e-commerce platforms.

Table 11 shows that a multiple linear regression was used to see if customer's perceived risk associated with each CKM tool (H1a), social risk (H1b), product risk (H1c), and delivery risk (H1d) has a significant impact on customer purchase intention in e-commerce platforms. The result indicated that the significant level of all hypotheses customer's perceived risk associated with each CKM tool (H1a), social risk (H1b), product risk (H1c), and delivery risk (H1d) was less than 0.05. Thus, the null hypotheses are rejected. In addition, the value of R-square was 0.915 at 95% of confidence level meaning that the independent variables (customer's perceived risk associated with each CKM tool, social risk, product risk, and delivery risk) can justified the dependent variable (Customer purchase intention) by 91.5% approximately, and  $p < 0.05$  reflects there are 91.5% of variances in customer attitude. Furthermore, each individual predictor has result showed that customer's perceived risk associated with each CKM tool ( $B=0.889$ ,  $P < 0.05$ ), Social risk ( $B=0.441$ ,  $p < 0.05$ ), product risk ( $B=0.083$ ,  $p < 0.05$ ) and delivery risk Social risk ( $B=0.315$ ,  $p < 0.05$ ) were positively significant to customer purchase intention on e-commerce platform. By examine of variance inflation factors for the four predictors, the result shows that VIF value of customer's perceived risk associated with each CKM tool = 7.235, the VIF value of social risk= 3.366, the VIF of product risk =3.186, the VIF of delivery risk = 5.073. Thus, there was no issue of multi-collinearity among these independent variables due to the VIF value being less than 10. All results of the structural research model are presented in figure 4.

**Table 11:** Multiple Linear Regression Analysis Summary for Hypotheses 1

Hypothesis	B	SE B	$\beta$	t	Sig.	VIF
H1a: CKM → PI	0.889	0.121	0.739	12.389	0.000*	7.235
H1b: SR → PI	0.441	0.031	0.394	14.194	0.000*	3.366
H1c: PR → PI	0.083	0.035	0.065	2.415	0.016*	3.186
H1d: DR → PI	0.315	0.042	0.257	7.541	0.000*	5.073

Noted.  $R^2 = 0.915$ , Adjusted  $R^2 = 0.912$ ,  $*p < 0.05$ . Dependent Variable = customer purchase intention in e-commerce platforms.



**Figure 4.** The results of the structural research model

## 5. Conclusion And Recommendations

### 5.1 Summary of the study

The study's summary is focused on research objectives and research questions, which are to precisely analyze the impact of risk perception on customer purchase intention in e-commerce platform. The study was guided by the following four research questions:

- Does the customer's perceived risk associated with each CKM tool significantly impact customer purchase intention on the e-commerce platform?
- Does social risk significantly impact customer purchase intention on e-commerce platforms?
- Does product risk significantly impact customer purchase intention on e-commerce platforms?
- Does delivery risk significantly impact customer purchase intention on e-commerce platforms?

Among 385 respondents, most of those who participated in this survey were female (263, 68.3%), aged between 18 - 40 (278, 72.2%), with a monthly income between 5,000 - 10,000 RMB, using e-commerce platforms 2-3 times a week (148, 38.4%), and occasionally worried about the risk of e-commerce platforms (156, 40.1%), think that the price of products on e-commerce platforms is low (137, 34.8%). From the survey instruments, the mean and standard deviation of variables of perceived risk associated to each CKM tool, Social risk, product risk, delivery risk, customer's purchase intention on e-commerce platform. The highest mean among variables of perceived risk associated to each CKM tool ( $\bar{x}$  = 4.23, SD = 1.13), followed by social risk ( $\bar{x}$  = 3.65, SD = 1.11), product risk ( $\bar{x}$  = 3.50, SD = 1.02), delivery risk ( $\bar{x}$  = 3.56, SD = 1.01), customer purchase intention in the e-commerce platform ( $\bar{x}$  = 3.75, SD = 1.24).

In this study, the researcher used multiple linear regression to test the hypotheses in order to understand the causal relationship. This paper uses multiple linear regression (MLR) to evaluate The Impact of Risk Perception on Customer Purchase Intention in e-Commerce Platform. In addition, Simple linear regression method was used to determine The Impact of Risk Perception on Customer Purchase Intention in e-Commerce Platform, including customers perceived the relationship between risk associated with each CKM tool, social risk, product risk, delivery risk and customers' purchase intention on e-commerce platforms.

Hypothesis testing shows that the respective variables are significantly less than 0.05. Table 12 summarizes the hypothesis testing results, and table 13 Summaries strengths of influence factors of dependent variable.

**Table 12:** Summary of the hypotheses testing results

Statement of Hypothesis	p-value	Decision results
<b>H1a:</b> The customer's perceived risk associated with each CKM tool has no significant impact on customer purchase intention in e-commerce platforms.	0.000*	Rejected
<b>H1b:</b> Social risk has no significant impact on customer purchase intention in e-commerce platforms.	0.000*	Rejected
<b>H1c:</b> Product risk has no significant impact on customer purchase intention in e-commerce platforms.	0.000*	Rejected
<b>H1d:</b> Delivery risk has no significant impact on customer purchase intention in e-commerce platforms.	0.000*	Rejected

\* $p < 0.05$ .

**Table 13:** Summary strengths of influence factors of dependent variable (customer purchase intention in e-commerce platforms)

Dependent variable	Rank	Independent variable	Standardized Coefficient
Customer's perceived risk associated with each CKM tool	1 <sup>st</sup>	Customer purchase intention in e-commerce platforms.	0.739
Social risk	2 <sup>nd</sup>	Customer purchase intention in e-commerce platforms.	0.630
Delivery risk	3 <sup>rd</sup>	Customer purchase intention in e-commerce platforms.	0.441
Product risk	4 <sup>th</sup>	Customer purchase intention in e-commerce platforms.	0.548

## 5.2 Discussion and Conclusion

In this research, the hypothesis testing indicated that those variables that customer's perceived risk associated with each CKM tool, Social risk, Product risk, Delivery risk have impact on customer purchase intention in e-commerce platforms.

### Customer’s perceived risk associated with each CKM tool, social risk, product risk, delivery risk and customers' purchase intentions

The result from this study demonstrate that customer’s perceived risk associated with each CKM tool, social risk, product risk, delivery risk had highly significant and positive relationship with customer purchase intention in e-commerce platform. The significant value of customer’s perceived risk associated with each CKM tool, social risk, product risk, delivery risk was 0.000, which is less than 0.05 meaning that customer’s perceived risk associated with each CKM tool, social risk, product risk, delivery risk has a significant influence of customer purchase intention in e-commerce platform.

This indicates that customer's perceived risk associated with each CKM tool has a significant impact to perceived value. Moreover, the findings of this study are consistent [Carolina and Francisco \(2008\)](#) that certain CKM tools has an impact on customers' purchase intentions. Furthermore, customer perceived risk can be expected to reduce consumers' willingness to use e-commerce platform for transactions ([Pavlou, 2003](#)).

The statistical data shows that the mean perceived risk associated with each CKM tool is 3.60, based on a descriptive analysis of perceived risk associated to each CKM tool derived from four questions in the that

researcher collected questionnaire. The lowest mean among the questions was "With CKM toll on e-commerce, there will be misleading, financially and socially damaging information platforms." Which is equals to 3.35 that lower than average means perceived risk associated to each CKM tool. However, the highest standard deviation is from the question "With the CKM toll on e-commerce, there will be misleading, financially and socially damaging information platforms "that is equal to 0.996. An e-commerce platform should be given to making e-commerce platforms more secure so that customers can purchase products in a safe and risk-free environment.

In terms of relationship between social risk and customer purchase, the result from this research indicated that social risk had highly significant and positive relationship with customer purchase intentions. The significant value of social risk was 0.000, which is less than 0.05. This indicates that social risk has a significant impact to customer purchase intention on e-commerce platform. In addition, according to Yokoyama et al. (2014), social risks influence purchase intentions on e-commerce platform. Moreover, based on previous research, social risk will reduce customers' trust in e-commerce platforms Jacoby and Kaplan (1972).

The statistical data shows that the mean social risk is 3.45, based on a descriptive analysis of social risk from three questions in that researcher collected questionnaire. The lowest mean among the questions was "Family and friends would disapprove of the products I purchase on an e-commerce platform." Which is equals to 3.26. The highest standard deviation is from the question "If I purchased a product on an e-commerce platform, I would not be encouraged by my friends or family." that equals 1.11. An e-commerce platform company should consider making the platform to provide better products, so that customers have more excellent products to buy.

In terms of relationship between product risk and customer purchase intention, the result from this research indicated that product risk had highly significant and positive relationship with customer purchase intentions. The significant value of product risk was 0.000, which is less than 0.05. This indicates that product risk has a significant impact to customer purchase intention on e-commerce platform. In addition, according to Chang et al. (2016), Shopping on e-commerce platforms has higher confusion and risk than shopping in traditional stores, which will reduce consumers' purchase intention. Moreover, based on previous research, Customers worry that the products of e-commerce platforms will have defects, which will reduce their purchase intention (Kapoor & Nuangjamnong, 2021; Wang & Nuangjamnong, 2022; Jin & Nuangjamnong, 2022; Hua & Nuangjamnong, 2021).

The statistical data shows that the mean product risk is 3.39, based on a descriptive analysis of product risk from three questions in that researcher collected questionnaire. The lowest mean among the questions was "When I buy products in e-commerce platform, the products I receive may not match the advertisements I see" Which is equals to 3.25. The highest standard deviation is from the question "When I buy products on an e-commerce platform, the product I receive may not be of excellent quality" that equals 1.02. E-commerce platforms should review product quality and offer high-quality products to customers.

In terms of relationship between delivery risk and customers' purchase intentions, the result from this research indicated that delivery risk had highly significant and positive relationship with customer purchase intentions. The significant value of delivery risk was 0.000, which is less than 0.05. This indicates that delivery risk has a significant impact to customer purchase intention on e-commerce platform. When customers fail to meet their expectations, they will reduce their desire to purchase on e-commerce platforms (Kapoor & Nuangjamnong, 2021; Wang & Nuangjamnong, 2022; Jin & Nuangjamnong, 2022; Hua & Nuangjamnong, 2021). Also, the studies by Jin and Nuangjamnong (2022) and Hua and Nuangjamnong (2021) illustrated that Customers will worry about delivery issues, which will affect their experience on e-commerce platforms.

The statistical data shows that the mean delivery risk is 3.40, based on a descriptive analysis of delivery risk from three questions in that researcher collected questionnaire. The lowest mean among the questions was "If I buy a product in e-commerce platform, it may be sent to the wrong place" Which is equals to 3.25. The

highest standard deviation is from the question “If I buy a product in e-commerce platform, it may get lost in transit” that equals 1.02. Therefore, e-commerce platform companies should improve delivery services and provide consumers with better delivery services.

### 5.3 Recommendations

According to the conclusions, the results of this study show that there are relationships between variables that influence customer's perceived risk associated with each CKM tool and customer purchase intention on e-commerce platform. Moreover, social risk, product risk and delivery risk has a significant effect on purchase intention on e-commerce platform.

Therefore, e-commerce platforms should maintain good services to meet customers' needs and meet their psychological expectations. Thus, the e-commerce platform should consider improving the platform that makes the customer can have an excellent experience, makes transactions simple to complete when using the platform, improves service quality, strictly reviews product quality, provides customers with excellent quality products, and improves delivery services, so that customers can receive products that meet their psychological expectations.

In addition, the e-commerce platform should also improve the customer's perceived risk associated with each CKM tool, which will also increase the customer's purchase intention. For example, the platform should design safe and risk-free links for customers when they use the platform, provide reasonable prices, and improve the platform procedures so that customers feel more secure when using the e-commerce platform. In terms of social risk, e-commerce platforms should understand customers' expectations, provide customers with products suitable for them, and then determine which aspects need attention to improve to increase customers' purchase intention. Then regarding the product risk, e-commerce platforms should improve the review process to provide customers with excellent products. Lastly, the delivery risk significantly affects the purchase intention, so e-commerce platforms should improve the delivery service quality to ensure that the products can be delivered to customers in good condition.

### 5.4 Further Studies

In this study, there are several limitations. Due to the time limitation, the researchers only focused on the impact of perceived risk, social risk, product risk, and delivery risk related to each CKM tool on consumers' purchase intention on the e-commerce platform. To obtain more information that is comprehensive and a deeper understanding of the factors, other researchers need to conduct similar studies to determine whether other relevant factors affect customers' purchase intention. In addition, further studies and populations with larger sample sizes are required to improve the generalization and credibility of the study. In addition, this study is based on Chinese people's use of e-commerce platforms and may not be fully applicable to people with other cultural backgrounds. Therefore, another study could be conducted in other countries to obtain accurate results. In addition, the data mainly provided in this study is the direct relationship between variables, and the research model does not consider any potential mediating relationship.

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