



Turning Pirates into Subscribers: A Status Quo Bias Perspective on Online Movie Service Switching Intention

Panca O. Hadi Putra ^{1*}, Muhammad Imam Santosa ¹, Ika Chandra Hapsari ¹, Achmad Nizar Hidayanto ¹, Sherah Kurnia ²

¹ Faculty of Computer Science, Universitas Indonesia, Depok 16424, Indonesia.

² Associate Professor, Computing and Information Systems, The University of Melbourne, Melbourne, Australia.

Abstract

This study aims to analyze the factors that influence a person's intention to use a subscription-based streaming service application using the perspective of the inertia of piracy movie application users. This study investigates the factors that affect the inertia of movie piracy application users. The theory used is a combination of the status quo bias theory and coping theory. This research uses a quantitative approach and an online survey method for data collection. Data collection resulted in 378 responses that were subsequently analyzed using the covariance-based structural equation modeling (CB-SEM) technique. It was found that inertia (the level of user inertia) negatively affects intention to use (the intention to use a subscription-based streaming service application) and convenience. In addition, convenience, perceived controllability (a person's level of control over the application), and morality positively influence intention to use. Furthermore, it was also found that perceived cost and personalization do not affect the intention to use. Inertia is also positively and significantly influenced by the transition cost (effort to move). The factors that have the highest correlation values are transition cost and inertia.

Keywords:

Online Movie Service;
Piracy; Switching;
Status Quo Bias Theory;
Coping Theory; CB-SEM.

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1- Introduction

The development of the Internet economy in Indonesia has progressed rapidly. According to the Indonesian Ministry of Communication and Informatics, Internet users in Indonesia have reached 202 million people, or 76.8% of the total population [1]. Easy internet access is one of the factors influencing the rapid growth of the Internet in Indonesia. Users with an Internet connection use it for various purposes, including entertainment. Watching movies online is one form of entertainment that can be accessed through the Internet. Movies on the Internet can be accessed either legally using a paid movie streaming service application or illegally using movie piracy applications.

According to data from the Digital Economy and Creative Content Forum, Indonesians between the ages of 15 and 45 watch movies using movie piracy applications or buy pirated digital video discs (DVDs) [2]. The practice of movie piracy in Indonesia has been prevalent for many years. The losses caused by movie piracy activity have a significant impact on actors, film crews, cinemas, and others. According to the Indonesian Association of Film Producers, each year the film industry loses approximately Rp5 trillion rupiah, or around \$348 million [3]. According to Akamai's 2022 report on digital piracy, Indonesia is ranked nine in global online piracy site visits [4].

* **CONTACT:** hadiputra@cs.ui.ac.id

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Indonesian Internet users tend to pirate movies because they are affordable and, for rural residents, it is the only way to access movies [2]. By the start of the global COVID-19 pandemic in 2020, piracy in Indonesia was still so rampant that the International Intellectual Property Alliance threatened to pressure the United States government to impose economic sanctions against the Indonesian government [5]. This is in line with the global trend highlighting that the COVID-19 lockdowns led to an increase in digital piracy [6]. According to several studies, people using movie piracy applications may be influenced by their attitude towards piracy and the habit of using the application [7–11].

The advent of subscription-based online movie streaming service applications is deemed as a solution that could replace the role of movie piracy in the market. Subscription-based movie streaming service applications are providers of online movies that can be accessed using a computer or mobile device with an Internet connection and by paying a subscription fee. There are several subscription-based streaming service application service providers that have been operating in Indonesia, including Netflix, Iflix, Viu, and Hooq. These applications can be accessed from anywhere and at any time using supported devices, so that people who lack access to cinemas can use them to watch movies. Subscription-based streaming service applications have succeeded in gaining popularity among the people of Indonesia. According to data by Medcom.id, the number of daily users of the application has reached 400,000 subscribers with a trend that continues to increase in line with the ongoing COVID-19 pandemic since early 2020 [12].

Given the importance and the economic consequences of movie piracy, many researchers have studied the phenomenon of legal movie streaming services. Previous studies can be categorized into two streams. In the first stream, there are prior studies that examine how legal subscription-based movie streaming service applications could impact digital piracy behavior. A study conducted by Nhan et al. [13] suggests that high usage of legal mobile streaming services can greatly reduce piracy. However, this may come at a price for legal movie streaming providers as they are expected by consumers to offer contents at much lower prices than those offered in the market [14]. This is amplified by a study from Egypt suggesting that cost of access may hinder adoption of subscription-based movie streaming services [15].

In the second stream of research, there are existing studies that explore the factors influencing the willingness to pay or subscribe to online movie streaming applications [16–19]. Studies in this stream of research typically employed well-established theories such as the theory of reasoned action (TRA), the theory of planned behavior (TPB), and theory acceptance model (TAM). According to related studies that use the TAM, there are several factors that influence the intention to subscribe to online movie streaming applications, namely content richness, perceived usefulness, perceived ease of use, free alternatives, and perceived price [17, 20]. In addition, according to studies that use the TRA and the TPB, the factors that influence intention to subscribe are attitude, involvement, morals, and frequency of application use [18]. Furthermore, aside from using these well-established theories, one study examines willingness to pay for online movie streaming applications through the lens of their competitive features such as recommendation system, resolution, and viewing options [16].

As movie piracy applications have been around for many years, users may have developed inertial habits towards using them [9]. Prior studies are limited in this regard as they have not examined movie piracy users who use subscription-based streaming service application from the inertia perspective. In other words, there is limited attention given by the research community in understanding the effects of inertia on movie piracy users' intention to use subscription-based movie streaming applications.

To fill this gap in the literature described above, this study examines factors that influence the user's intention to use the subscription based streaming service application through a perspective of the movie piracy application users' inertia. Grounded in both status quo bias theory and coping theory, this study proposes a model that highlights the effect of user inertia on users' intentions to use subscription-based streaming service applications. Status quo bias is a theory in which a person tends to maintain his or her current state of affairs [21, 22], which in our case is using movie piracy applications compared to using legal alternatives such as subscription-based streaming service applications. This theory is used to assess a person's reluctance to use a new application. Status quo bias affects a person's response that can be studied through the lens of coping theory, which is a theory commonly used in the information systems (IS) literature to determine how a person responds to a technology or information technology (IT) event such as the discovery of new technology, corporate data breaches, and others [23, 24]. Using a combination of these two theories, this study is expected to benefit subscription-based streaming service application providers looking to improve their applications as well as government planning policy to reduce movie piracy activities.

2- Literature Review

This section will discuss the literature studies that have been carried out during this research. The explanation includes several theories and concepts related to research. These theories and concepts include digital movie piracy, subscription based streaming service, coping theory, and status quo bias.

2-1- Digital Movie Piracy

Belleflamme and Peitz [25] define digital piracy as an act of reproduction, use, or distribution of a digital product using digital technology without the authorization of the product owner. Digital products include books, software, music, and videos [26]. Thus, movie piracy refers to the act of reproducing, using, distributing a film file in the form of video or audio using digital technology without authorization from the owner of the film file. According to Elswah [15], digital movie piracy development is enabled by high broadband connection that allows the transfer of a large file.

Indonesia has taken various measures to fight movie piracy since the 1980s. The government has closed thousands of websites and movie piracy applications, but this has not made the practice of piracy disappear in Indonesia. In 2020, one of the largest pirated online movie providers in Indonesia, namely IndoXXi, was closed down by the government. The hope was that with the closure of IndoXXi, movie piracy could be reduced in Indonesia. However, other similar applications have since emerged that pirate both Indonesian and international movies. As demonstrated in a piracy search experiment conducted in the context of the Indonesian market, movie piracy applications were found to be a net substitute for subscription-based streaming services [27]. This was evidenced by initial failure of Netflix to launch in Indonesia, which was due to a blockage by a telecommunication carrier and subsequently led to 19.7% increase in search for pirated movies in the country [27]. Furthermore, as a substitute for movie piracy applications, high level of usage of legal subscription-based streaming service can lead to reduced piracy behavior [13].

Digital piracy behavior may be related to the moral beliefs and ethics of a person [28]. Morality is one of the determining factors for someone to do something or not. Research on software piracy has found moral belief to be a strong predictor of piracy behavior. It would be instructive to find out whether a person's moral level can affect a person's intention to move from using illegal applications such as movie piracy to legal applications such as subscription-based streaming services. Closely related to morality, a study also found that individuals with more conservative ideologies tend to not access pirated online media [29].

Previous studies have examined several factors that influence the use of movie piracy applications both inside and outside Indonesia [7–11]. In a study conducted by Arli and Tjiptono [7] and Jacobs [8], it was found that the main factor determining whether a person uses a movie piracy application is the attitude towards the application. Another study indicated that suboptimal law enforcement in Indonesia may have contributed to more people watching pirated movies [30]. Research by Tjiptono and Arli [10] added that men tend to have a more positive attitude towards movie piracy applications compared to women. Subsequent research conducted by Phau et al. [9, 11] also indicated that people who use movie piracy applications are influenced by habits and self-efficacy. This is related to a recent study suggesting that the traits of low self-control are closely associated to behavior engaging with pirated online media [31].

2-2- Subscription-Based Streaming Services

There are several terms with almost the same meaning in referring to movie streaming application services. Daniels [32] uses the term subscription video on demand (SVOD), which is a digital service in the form of video where users can watch various video contents provided by paying a monthly fee accessible from numerous devices. Oyedele and Simpson [17] suggest the term entertainment streaming applications (ESAs), which means a software or platform that allows users to access content on demand in any location using internet connections such as computers, smartphones, and smart TVs. ESAs offers various digital contents such as movies, TV shows, and music. Both definitions emphasize the nature of subscription-based streaming service applications, namely entertainment and high mobility. As the term streaming is a dynamic concept, Spilker and Colbjørnsen [33] suggest other dimensions to it, including whether the streaming activity is legal or illegal (piracy streaming).

Subscription-based is a business model where users pay periodically for services accessed by users [34]. Initially, this business model was commonly used to subscribe to magazines and newspapers. Currently, the subscription-based business model is widely used in satellite TV services and many software-as-a-service products that use subscriptions to obtain their revenues. Subscription-based streaming services have several contents such as movies, TV shows, and music [17]. In this study, the focus of the content to be discussed is video content comprising movies or TV shows. Subscription-based streaming services entered Indonesia in 2016. The number of users of subscription-based streaming service providers continues to increase every year [35]. Generally, applications originating from Indonesia have lower prices than applications originating from outside Indonesia.

Subscription-based streaming service applications offer several advantages when compared to movie piracy applications, namely convenience and personalization. The subscription-based streaming service applications usually have a download feature where downloaded movies can be viewed anytime and anywhere according to the device when downloaded. Several studies have found that convenience is a factor that influences users' intentions to use applications [36-38]. Personalization is a feature provided by an application where the contents presented to users are in accordance with their preferences and desires [39]. Research conducted by Wang et al. [39] and Wessel & Thies [40] support the notion that that personalization can indeed affect users' intention to use an application.

However, subscription-based streaming service applications also have disadvantages when compared to movie piracy applications. One evident drawback is the price where subscription-based streaming service applications require a subscription fee to use the service. A study by Hasan (2017) [20] that fees indeed affect intention to use subscription-based movie streaming service.

There are several other studies that have examined subscription-based streaming services [14–20, 36]. Previous research can be divided into three main topics: Intention to use, willingness to pay, and the effect of subscription-based streaming service applications on movie piracy applications. The most frequently used theories in previous studies are TAM, TRA, and TPB. The details of these studies are depicted in Table 1.

Table 1. Summary of Past Research Related to Movie Streaming Services

Author	Context (Country)	Theory/Model	Methods	Results
De Matos et al. [14]	Subscription Affect Piracy	-	Experiment	SVOD can reduce piracy but requires great sacrifice.
Elsawah [15]	Subscription Affect Piracy (Egypt)	-	Descriptive survey	Netflix cannot be an alternative to piracy and the main reason is because Netflix is a paid service, which serves as a key barrier for users.
Riekkinen [36]	Subscription Affect Piracy	Satisfaction, Piracy Neutralization, Attitude toward Piracy	CB SEM	SVOD satisfaction has little effect on attitude by decreasing piracy neutralization.
Hasan [20]	Willingness to Pay (Indonesia)	TAM	SEM	Willingness to pay positively influenced by content richness, perceived usefulness, perceived ease of use and negatively influenced by free alternatives and perceived price.
M. S. Kim et al. [16]	Willingness to Pay (China and Korea)	-	Conjoint Analysis	Recommendation system, resolution, viewing options are important factors that affect willingness to pay.
Oyedele & Simpson [17]	Intention to Recommend (United States)	TAM dan Perceived Value	PLS SEM	All factors of consumption and identity salience affect the likelihood of a recommendation.
Sardanelli et al. [18]	Intention to Pay (Subscribe) (Italy)	TRA dan TPB	SEM	Attitude, involvement, moral judgement, and the frequency of application usage is the most important factor affecting the intention to subscribe.
Ström & Martinez [19]	Satisfaction, loyalty, and willingness to pay (Sweden and Finland)	ESSQUAL	Exploratory factor analysis	ESSQUAL influences customer satisfaction and loyalty but has no effect on willingness to pay.

2-3- Coping Theory

Coping theory is a theory commonly used in the Information Systems literature which attempts to explain how a person responds to an IT event such as the discovery of new technologies, events caused by technology, and others [23, 24]. In coping theory, there are two steps taken by a person to make decisions or respond to these events, namely primary appraisal and secondary appraisal [41]. In primary appraisal, users will estimate the consequences received from IT events that occur and how these events affect the lives of users [23]. Primary appraisal is divided into two, namely opportunity appraisal and threat appraisal. Opportunity appraisal is a positive consequence received by users. Users believe that IT events will have a positive impact on users such as entertainment, money, position, and others [42]. Threat appraisal is a negative consequence received by the user. Users believe that IT events will have a negative impact or threat to users such as loss of money, loss of work, loss of control and others [42]. Then in secondary appraisal, the user will estimate how much control the user has when an IT event occurs and what options are there to adapt to the incident [23]. Users will exhibit their respective responses according to the competencies possessed by users when IT events occur [42].

There are several previous studies that have used coping theory. Beaudrey & Pinsonneault [23] created a model called the coping model of user adaptation (CMUA). Research from Elie-Dit-Cosaque & Straub [43] strengthened the model that has been made previously by using it in an experiment. The experiment was carried out in 2×2 laboratory settings to determine the responses from users, both opportunities and threats. In addition, Bhattacharjee et al. [44] utilized coping theory to evaluate the response of users of a new IT system in a hospital. Their study divided the user responses obtained into four types, namely involved, obedient, reluctant, and deviant. Furthermore, Gong et al. [22] used coping theory to analyze how web payment users adapt to become mobile payment users. This study follows the model from several studies mentioned above by adapting coping theory according to the characteristics of the subscription-based streaming service application. The characteristics in question are the benefits provided, namely convenience and personalization, while the disadvantages given are the perceived costs (the subscription price of the application).

2-4- Status Quo Bias

Status quo bias is a theory in which a person tends to maintain the current status quo compared to using other existing alternatives [21]. The status quo itself in this context refers to the status or state of affairs that a person is currently maintaining. In the theory of status quo bias, there are three things that affect a person's partiality towards the current state of affairs, namely rational decision making, psychological commitment, and cognitive misperception [21]. Rational decision making makes someone to take into account the benefits and costs made when switching to a new alternative, therefore someone will rationally maintain the old system [45]. For example, subscription-based streaming services offer advantages compared to movie piracy applications such as recommendations and high definition (HD) images. However, there are costs when moving, such as paying a certain amount of money to subscribe, which keeps users from using the movie piracy application. Psychological commitment is a sunk cost value. Sunk cost is the time and effort that has been spent on maintaining the user's status quo [45]. For example, although rationally switching to a subscription-based streaming service application is an advantage, movie piracy users have spent time and effort from users to learn how to use the application so that users continue to use the movie piracy application. Cognitive misperception is the third factor influencing status quo bias. Cognitive misperception is associated with loss aversion, which means that the user will receive more losses than gains [45, 46].

In the IS literature, two inertia effects have been implicitly found when switching to a new alternative. The two effects are direct and biased [22]. The direct effect is the effect that results when the inertia will immediately prevent the user from using a new alternative. The effect of bias is divided into two, namely upward bias and downward bias. Upward bias is the inertia which will tend to strengthen the threat received when using a new alternative while downward bias refers to inertia that will tend to weaken the opportunity to use a new alternative. Both types of bias will prevent users from using new alternatives because there will be significant losses for users. There are several previous studies that have utilized the theory of status quo bias. In these studies, it was found that status quo bias can cause a decrease in the desire to use new alternative systems [22, 47, 48]. This theory has been used in various fields such as health, education, and mobile applications. Therefore, this study seeks to apply the perspective of the theory of status quo bias to movie streaming applications.

3- Hypothesis Development

This section elaborates on the basis for the formation of the model and the hypotheses that will be tested in this study. The research model, as presented in Figure 1, uses coping theory and status quo bias theory as the principal theoretical foundations. Coping theory comprises two steps, namely primary appraisal and secondary appraisal. In this study, coping theory's primary appraisal is represented by three factors, namely convenience, personalization, and perceived cost. Personalization and convenience are opportunity appraisals, while perceived costs are threat appraisals. Then coping theory's secondary appraisals are represented by perceived controllability and morality. Perceived controllability is the main component of secondary appraisal where users will assess their control over the application. Morals are an additional factor which will be taken into account in this study of digital piracy. Previously, morality has been found to influence a person's desire to use legal applications [18].

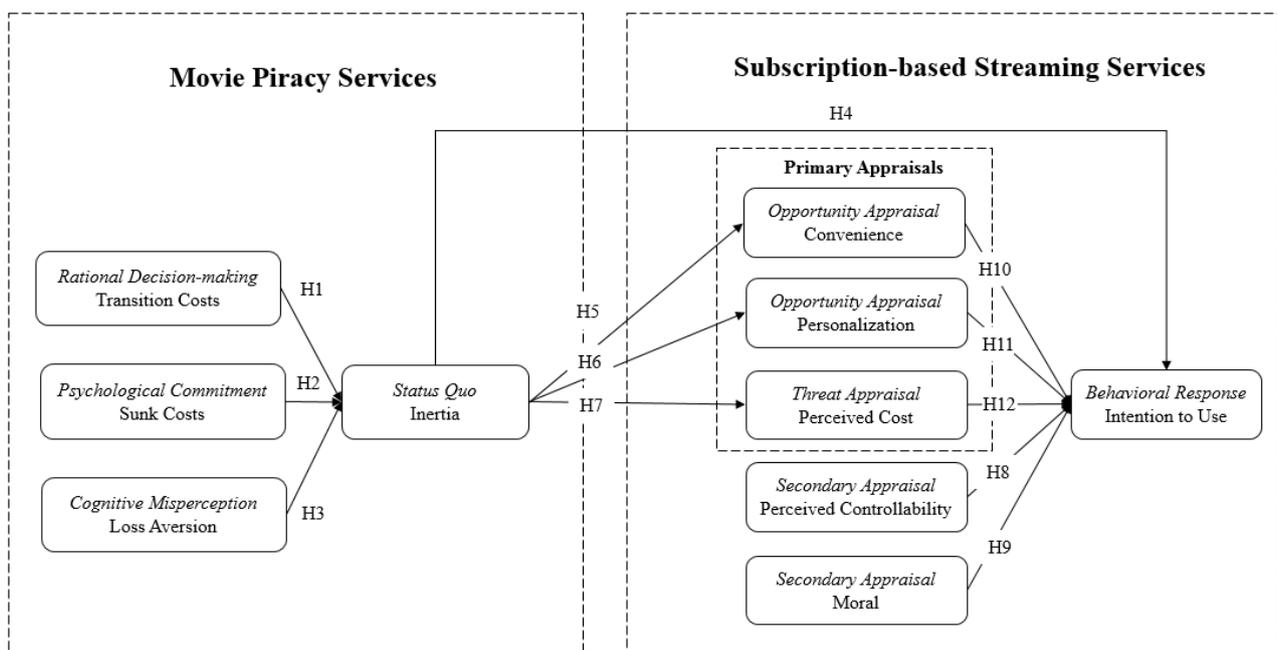


Figure 1. Research model

In this study, the status quo theory can be used to assess whether users will continue to use movie piracy applications compared to subscription-based streaming service applications [21]. The main factor used in the theory of status quo bias is inertia. Users' inertia is influenced by three primary factors, namely cognitive misperception which is represented by loss aversion; psychological commitment, represented by sunk cost; and rational decision-making, represented by transition cost. The two theories described above are related through the effects caused by inertia, namely direct and bias effects [22]. The direct effect has a direct relationship to the intention to use and the bias effect is related to the primary appraisal.

3-1- Relationship between Transition Cost, Sunk Cost, and Loss Aversion with Inertia

The information systems (IS) literature has identified three factors that affect a person's status quo, namely rational decision making, psychological commitment, and cognitive misperception. In this context, transition cost refers to the time and effort required by users to switch from movie piracy applications to subscription-based streaming service applications. Transition costs represents rational decision-making related to the time and effort to move to a different service. In this study, the focus regarding transition costs is on the time and effort spent to switch to using a subscription-based streaming service application, such as the time used to register for the application, the effort made to get the application, and so on. If the time and effort required is large, it will make users reluctant to use the new application. Transition costs are also used in other studies such as the migration of users from Android to iOS [49] and the shift from web payments to mobile payments [22]. Based on this description, it can be hypothesized that transition cost affects the level of user inertia. The higher the effort to switch from an application, the higher the level of a person's reluctance to switch and vice versa.

H1: Transition cost affects inertia.

Sunk cost is the user's unwillingness to eliminate the commitment formed when learning and using movie piracy applications [22, 45]. Sunk cost represents psychological commitment in which the focus of this variable is the commitment that has been made to obtain something [22, 48]. Movie piracy application users have used the application first and thus there appears to be a commitment based on the time and effort that has been expended by the user. Users who have a high commitment will continue to use the movie piracy application. Therefore, the higher the value of the sunk cost factor, the higher the level of user inertia when using the movie piracy application. In previous research, web payment users have a strong commitment such that sunk costs are one of the influencing factors when switching to mobile payment applications [22].

H2: Sunk cost affects inertia.

Loss aversion is an estimate of the amount of loss and the least benefit felt by users when using subscription-based streaming services applications [45]. Loss aversion represents cognitive misperception where this factor focuses on the user's misperception. Users will always think about the advantages and disadvantages provided by the new application that will be used. The less the estimated profit obtained, the less the user's desire to use the new system will be. Users will feel that switching to a subscription-based streaming service application will not provide many benefits so that they will feel reluctant to switch and will continue to use the movie piracy application. This is reinforced by research conducted by Gong et al. [22], who found that loss aversion of web payment users affects the level of user inertia. Therefore, the higher the estimated loss caused by the subscription-based streaming service application, the higher the inertia of the user to continue using the movie piracy application.

H3: Loss aversion affects inertia.

3-2- Relationship between Inertia and Intention to Use

Inertia is a user's attitude to persist in using the movie piracy application despite the existence of even better alternative systems such as subscription-based streaming service applications [22, 50]. Inertia has several effects on the use of new alternatives. One of them is the direct effect in which inertia can directly affect the user's intention to use subscription-based streaming service applications. Users who have used the movie piracy application for a long time and who have developed the habit to use it will feel that there is no other application that is better than the one they are currently using. Even if there is an application that is far superior to the movie piracy application, users will continue to use applications that they are more familiar with [21]. This can lead to reduced user intention to use the new application. Therefore, the higher the level of user reluctance to switch, the lower one's desire to use a subscription-based streaming service application. In one study, it was stated that the inertia of web payment users affects a person's desire to use mobile payments [22].

H4: Inertia affects intention to use an application.

3-3- Relationship between Inertia and Convenience/Personalization

Inertia has a downward bias effect in which inertial users will tend to lower the chances of using subscription based streaming service applications due to bias towards movie piracy applications [22]. Users who have used the movie piracy application for a long time will feel that the application used now is superior. This can lead to a bias in the perception of the user towards the new application. For example, piracy application users will feel that the movie piracy application

can provide free access to all their films, and then the user will feel no need for the convenience and personalization that the new application provides [38, 39]. Therefore, the user's intention to use the new application, namely the subscription-based streaming service application, is reduced. The higher the level of user reluctance to switch, the lower the opportunity appraisal, namely the value of personalization and convenience.

H5: Inertia affects convenience.

H6: Inertia affects personalization.

3-4- Relationship between Inertia and Perceived Cost

Inertia has an upward bias effect in which inertial users will tend to always take into account the threats that will be given when using new alternatives [22]. This bias arises due to cognitive misperception where users will always feel that the losses that will be felt are greater than the benefits gained [45]. For example, the user of the movie piracy application does not spend money to use the application, while to use the new application the user must provide money to subscribe. Therefore, users who are reluctant to switch will feel that there is a threat when using subscription based streaming service applications, namely perceived cost. The higher the level of user reluctance to switch, the higher the threat appraisal, namely the perceived cost value.

H7: Inertia affects perceived cost.

3-5- Relationship between Perceived Controllability and Moral with Intention to Use

In coping theory there is a secondary appraisal which is used to measure the level of control the user has over new alternatives. In this study, secondary appraisal is represented by perceived controllability and morals. Perceived controllability is a factor that focuses on a person's assessment of the control of a subscription based streaming service application [42]. When users want to use a new application, they will estimate the control they have. For example, there is a problem with the subscription-based streaming service application, such as an account problem, if the user has the confidence to control the application, the user will feel that the application can be used. But on the other hand, if the user panics when such a problem occurs, the user will tend not to use the application.

Morality is one of the factors used to assess the ethics of users when using an illegal application. In the research of Sardanelli et al. [18], morality or moral judgement is one of the factors that influence a person's intention to use a subscription-based streaming service application. If the user feels that using something illegal such as the movie piracy application can hurt someone and is not accepted by oneself, the user will look for another way to watch movies, namely by using a legal application such as a subscription-based streaming service application. The higher a person's moral level, the more they will avoid movie piracy applications and will increase their intention to use legal applications.

H8: Perceived controllability affects intention to use an application.

H9: Morality affects intention to use an application.

3-6-Relationship between Convenience, Personalization, and Perceived Cost with Intention to Use

In coping theory, there is a primary appraisal that influences a person's intention to use an application. In previous studies, primary appraisal was divided into two aspects, namely opportunity and threat appraisal. Convenience and personalization represent opportunity appraisals, while perceived cost represents threat appraisals.

Convenience is a factor that focuses on technological capabilities to be accessed anywhere and anytime [38]. The subscription-based streaming service application can be accessed from anywhere and anytime using a mobile phone connected to the Internet. This application can also be used without being connected to the Internet but must save the movies that you want to watch beforehand. According to research from Mallat et al. [51], ease and mobility in any situation can increase a person's intention to use technology. The higher the convenience provided by the subscription-based streaming service application, the higher the intention of someone to use the application and vice versa. Previous research on mobile payments has also demonstrated that convenience is one of the factors that influence user intentions [37].

H10: Convenience affects intention to use.

According to Xu and Gutiérrez [38], the application must be able to create a unique identity for each user. Personalization is one of the advantages of using a subscription-based streaming service application in which the desires and needs of users are catered according to the desired and different preferences of each user [39]. In the context of movie streaming applications, what is meant by preference is the type of film and film genre offered by the application. Wang et al. [39] stated that personalization is one of the factors that influence the intention to use m-government applications. The more effective and consistent the personalization of the application, the greater the intention of someone to use the application and vice versa.

H11: Personalization affects intention to use an application.

Perceived cost is a factor that focuses on the sacrifices made by users to get a service or product at the price of other similar products [52]. When compared to the movie piracy application, one of the weaknesses of the subscription-based streaming service application is the subscription that must be paid per month. In one study, perceived cost is a factor that influences a person's decision to subscribe to Netflix [20]). The higher the perceived cost received by the user, the lower a person's intention to use a subscription-based streaming service application and vice versa.

H12: Perceived cost affects intention to use an application.

4- Methodology

As quantitative research, this study employed a questionnaire as a data collection method. The questionnaire contains previously validated constructs from the literature with corresponding statements about the factors used in the model in which each factor corresponds to three or four indicators. The indicators are compiled into a questionnaire using Likert scales from 1-5. This research instrument consists of four parts, namely validation, demographics, movie piracy applications, and subscription-based streaming service applications. The validation section is the initial part where respondents were screened to determine if they are not an object of research. If the respondents are the object of research, they were guided directly to the second section of the questionnaire. The second part is the demographics section which contains questions about gender, age, last education, occupation, income, frequency of application use, and applications used. The third and fourth sections will contain statements about the indicators that exist in the research model. In this study, there are two sections which concern movie piracy applications and the subscription-based streaming service application. In the section on movie piracy, there are four constructs, namely transition cost, sunk cost, loss aversion and inertia. Subsequently, in the subscription-based streaming service application section, there are six constructs, namely convenience, personalization, perceived cost, perceived controllability, moral, and intention to use. Details of each indicator are presented in the Appendix I.

The readability test was conducted after the questionnaire was completed. This readability test was conducted to determine the level of respondents' understanding of the statements in the questionnaire. In addition, the readability test was also performed to test the feasibility of the questionnaire, such as language rules to ensure common understanding and the same meaning of the questions between the researcher and the respondent. At this stage, we invited 10 respondents according to the distribution of the respondents' biodata in the questionnaire. Subsequently, if there was input from the respondent, we would modify the questionnaire according to the input from the respondent. After all the inputs had been addressed, we proceeded to the data collection stage.

The previously created questionnaire was entered into a survey platform for distributing surveys. Data collection was carried out online to maximize respondent reach in a short period of time. We distributed the questionnaire via Twitter, Instagram, Facebook, LinkedIn, and personally to friends and colleagues by direct chats via Line and WhatsApp. The data that was collected contains 378 responses from Indonesian users (see Figures 2, and 3, and Table 2 for a summary of the characteristics of the respondents). The amount of data required by covariance-based structural equation modeling (CB-SEM) research is 5 or 10 times that of statements in the research instrument [53]. The number of statements in this study were 32. The total data needed to interpret this research is 160 or 320. Therefore, the data collected meet the requirements of the CB-SEM sample size.

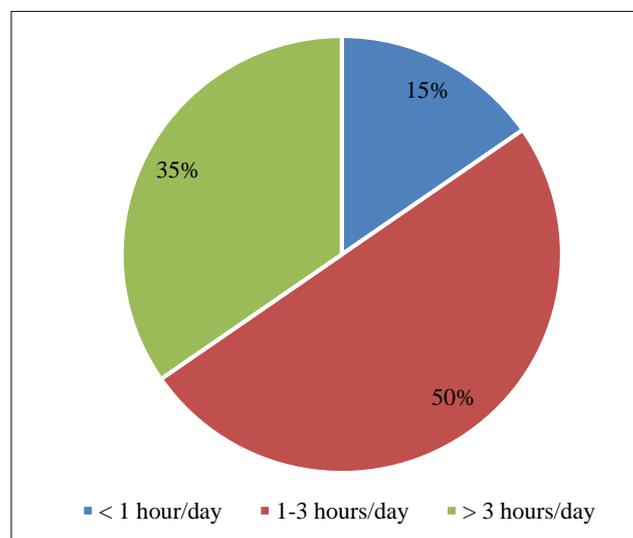


Figure 2. Frequency of using subscription-based movie service applications

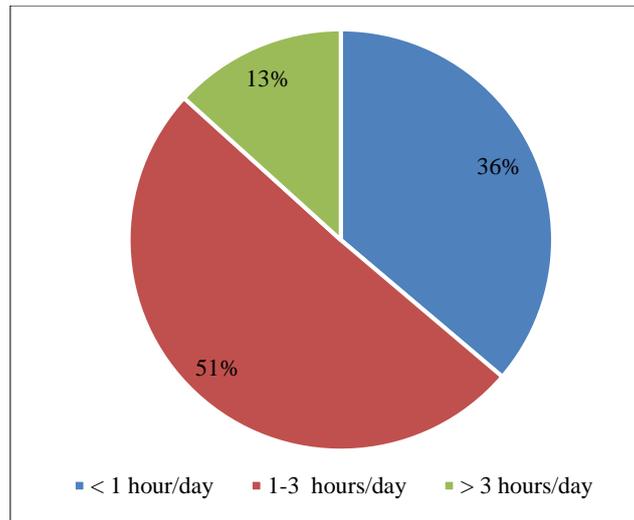


Figure 3. Frequency of using movie piracy applications

Table 2. Characteristics of the sample

Characteristics		Frequency	Percentage
Gender	Male	194	51%
	Female	184	49%
Age	< 17 years	15	4%
	17-23 years	284	75%
	24-30 years	45	12%
	31-40 years	30	8%
	40 years	4	1%
Educational background	SD/SMP/SMA or equivalent	178	47%
	Diploma (D1, D2, D3)	18	5%
	Bachelor's degree	160	42%
	Master's degree	22	6%
	Doctoral degree	0	0%
Occupation	Students	247	65%
	Entrepreneur	9	2%
	Civil servant	13	3%
	Private employee	99	26%
	Does not work	10	3%
Income	<= Rp1.000.000	99	26%
	Rp 1.000.001-Rp 5.000.000	176	47%
	Rp 5.000.001-Rp 10.000.000	63	17%
	Rp 10.000.001-Rp 15.000.000	19	5%
	> Rp 15.000.000	21	6%
Frequency of Use of the Movie Piracy Application	< 1 hour/day	137	36%
	1-3 hours/day	191	51%
	> 3 hours/day	50	13%
Duration of Using the Movie Piracy App	< 6 months	89	24%
	6-12 months	51	13%
	1-2 years	65	17%
	> 2 years	173	46%
Still User of the Movie Piracy Application?	Yes	178	47%
	No	200	53%
Frequency of Use of Subscription-Based Streaming Service Applications	< 1 hour/day	58	15%
	1-3 hours/day	189	50%
	> 3 hours/day	131	35%

Characteristics	Frequency	Percentage	
Duration of Using Subscription-Based Streaming Service Applications	< 6 months	144	38%
	6-12 months	109	29%
	1-2 years	85	22%
	> 2 years	40	11%
Application Type Subscription-Based Streaming Service	Netflix	254	67%
	iFlix	7	2%
	Viu	59	16%
	HOOQ	22	6%
	Others (Amazon Prime Video, Genflix, Catchplay, etc.)	15	4%

5- Results

In this section, we present data analysis results in two sections, namely measurement model and structural model assessments.

5-1- Measurement Model Assessment

The measurement model test is a process carried out to determine the level of interrelationship between the constructs and their indicators and the level of accuracy of the indicators explaining the constructs. There are several stages that must be performed, namely the convergent validity test, discriminant validity test, and reliability test. The validity of the measurement is how the level of measurement can represent a concept correctly as well as the extent to which the measurement can be free from systematic error [54-56].

The validity test consists of two tests, namely the convergent validity test and the discriminant validity test. When conducting a convergent validity test, there are several steps that must be performed, including examining the value of factor loadings and average variance extracted (AVE). The cut off value for factor loadings is greater than 0.7 while for AVE it is greater than 0.5 [57, 58]. To achieve this cut-off value, we removed indicators that have factor loadings below 0.7. There are seven indicators that have been removed, namely PC2, SC1, LA3, TC2, CON1, IU1 and PCA3. The results of factor loadings are depicted in Table 3.

Table 3. Factor loadings, AVE, CR, and CA

Variable	Indicator	Factor loadings	AVE	CR	CA
Transition Cost (TC)	TC3	0.775	0.509	0.756	0.751
	TC1	0.701			
Sunk Cost (SC)	SC3	0.708	0.596	0.745	0.736
	SC2	0.832			
Loss Aversion (LA)	LA2	0.742	0.543	0.704	0.701
	LA1	0.744			
Inertia (IN)	IN1	0.825	0.648	0.847	0.846
	IN2	0.827			
	IN3	0.757			
Convenience (CON)	CON2	0.831	0.700	0.875	0.873
	CON3	0.826			
	CON4	0.857			
Personalization (PER)	PER1	0.856	0.765	0.907	0.904
	PER2	0.941			
	PER3	0.821			
Perceived Cost (PC)	PC3	0.800	0.578	0.732	0.728
	PC1	0.726			
Perceived Controllability (PCA)	PCA2	0.862	0.621	0.828	0.801
	PCA1	0.858			
Moral (MOR)	MOR3	0.855	0.787	0.917	0.916
	MOR2	0.912			
	MOR1	0.892			
Intention to Use (IU)	IU2	0.848	0.758	0.904	0.903
	IU3	0.862			
	IU4	0.903			

After the factor loadings have been successfully tested, the next step is to check the AVE value. Then the discriminant validity test will be carried out. In this test, there are two factors that are checked, namely the correlation matrix and the root of the AVE (see Table 3). This test can be passed if the results of the correlation indicator loading are greater than the cross loading [59]. After that, the root test of AVE will be checked. The requirement to pass this test is if the AVE root is greater than the correlation value with other variables [59]. In Table 3, we can see that the AVE root is greater than the correlation between other variables.

Furthermore, measurement model should be assessed with regard to its reliability, which is an estimate of internal consistency of variables in measuring a given phenomenon (Hair et al., 2010). In our case, there are two measures that should be considered, namely the values of composite reliability (CR) and Cronbach's alpha (CA). Both CR and CA values should exceed the threshold value of 0.70 [56]. As shown in Table 3, both CR and CA values are above the suggested threshold value of 0.70 indicating acceptable reliability for all constructs.

5-2- Structural Model Assessment

At this stage four steps are performed, namely checking the Goodness of Fit (GoF) of the structural model, testing the hypothesis, testing the closeness of direct relationships, and testing the coefficient of determination. This test was conducted to evaluate the fit between the model and the data collected. There are several GoF indicators that must be good fit so that the research model is in accordance with existing conditions. In this study, all GoF indicators exhibit good fit, and therefore the measurement model is in accordance with the existing data (see Table 4).

Table 4. GoF Test Results

GoF indicator	Cut-off value
Goodness of fit index (GFI)	> 0.9
Adjusted goodness of fit index (AGFI)	> 0.9
Normed fit index (NFI)	> 0.9
Comparative fit index (CFI)	> 0.9
Root mean square error of approximation (RMSEA)	< 0.07

After all the GoF tests have been carried out, the next step is to test the hypotheses in the research model. Table 5 is a breakdown of the hypotheses of this study with their respective estimates (β) and P-values. There are seven accepted hypotheses out of 12 proposed hypotheses. The coefficient of determination test (R^2 values) is conducted to determine how clearly the dependent variable is explained by the independent variable. These values describe the percentage of clarity given by the independent variable. Table 6 presents the R^2 results for dependent variables.

Table 5. Hypothesis Test Results

Hypothesis	Path	β	P	Result
H1	Transition Cost \rightarrow Inertia	0.633	0.011	Accepted
H2	Sunk Cost \rightarrow Inertia	-0.153	0.294	Rejected
H3	Loss Aversion \rightarrow Inertia	0.134	0.096	Rejected
H4	Inertia \rightarrow Intention to Use	-0.203	0.011	Accepted
H5	Inertia \rightarrow Convenience	-0.359	0.010	Accepted
H6	Inertia \rightarrow Personalization	-0.264	0.007	Accepted
H7	Inertia \rightarrow Perceived Cost	-0.049	0.636	Rejected
H8	Perceived Controllability \rightarrow Intention to Use	0.232	0.005	Accepted
H9	Moral \rightarrow Intention to Use	0.218	0.005	Accepted
H10	Convenience \rightarrow Intention to Use	0.280	0.008	Accepted
H11	Personalization \rightarrow Intention to Use	0.132	0.114	Rejected
H12	Perceived Cost \rightarrow Intention to Use	0.001	0.869	Rejected

Table 6. R^2 Results

Variable	R^2
Inertia	0.344
Perceived cost	0.002
Personalization	0.049
Convenience	0.097
Intention to use	0.444

Based on the results presented in Table 6, inertia is explained by 34% of the variables, namely transition cost, sunk cost and loss aversion; the remainder is explained by other variables which were not examined. Then the perceived cost is only explained by 0.2% of inertia while the other 99.8% is explained by variables outside this study. Personalization and convenience were explained by 4.9% and 9.7% respectively by inertia and the rest was explained by other variables not studied. Intention to use is the largest variable that is explained, which is 44.4%. The remaining 55.6% is explained by other variables outside the scope of this study.

6- Discussion

This section discusses the results of hypothesis testing from the study. This section explains the findings found from the hypotheses and how the findings of this study relate to previous research. The discussion is divided into two parts, namely how the user inertia of the movie piracy application affects the use of the subscription based streaming service application and the factors that affect the use of the subscription based streaming service application.

6-1- Effect of Inertia of Movie Piracy Application Users on Intentions to Use Subscription-Based Streaming Service Applications

In previous studies, inertia is influenced by three main factors, namely transition costs, sunk costs, and loss aversion [21, 22]. After testing the hypotheses, the results were contradictory to previous studies which found that sunk cost ($p = 0.294$) and loss aversion ($p = 0.096$) did not affect the level of inertia of the user. Therefore, H2 and H3 are rejected. This may be due to the ease of use of the application and how to use it is known by everyone so that it does not create a meaningful commitment to its users [60]. This also causes a perception formed by users that there is no harm that will be experienced if they leave the movie piracy application. However, the transition cost ($p = 0.11$) which is the time and effort of switching to a subscription-based streaming service application affects the level of user inertia so that H1 can be accepted. Transition cost also exhibited the strongest relationship with inertia in this study. Time and effort still affect a person's intention to switch to a subscription based streaming service application. This is likely due to the lengthy protocol when switching to applications such as downloading the application from the Google Play store, account registration, and setting up payments by providing credit card details. This is in accordance with the research of Gong et al. [22] and Lin & Huang [49], which observed that transition costs affect the movement of users from the old system to the new alternative system.

Inertia has both direct and biased effects on the use of new alternative applications. This direct effect was proven in this study where the level of inertia ($p = 0.011$) of users negatively affected users' intentions to use subscription-based streaming service applications and it can be said that H4 was accepted. Thus, it can be concluded that the higher the level of inertia, the lower a person's intention to use the application. This is because inertia users will tend to stick to the movie piracy application even though there are new, better alternative applications such as subscription-based streaming service applications [50]. These results are in accordance with the research conducted by Gong et al. [22].

The effect of bias is divided into two, namely upward bias and downward bias. The results of the study demonstrate that inertia negatively affected convenience ($p = 0.01$) and personalization ($p = -0.264$), so that H5 and H6 were accepted. This can cause inertia which in turn can introduce bias for movie piracy application users who would tend to judge that convenience and personalization in subscription-based streaming service applications are not beneficial or necessary. This is in line with the research of Gong et al. [22] who say that inertia negatively affects the chances of using new applications. Then from the results of the study it was also found that inertia had no effect on perceived cost ($p = 0.636$), so H7 was rejected. This can be due to the fact that in recent years Indonesian citizens tend to exhibit consumptive behavior. A consumptive society tends to follow trends. At the time this study was conducted, the COVID-19 pandemic was ongoing, and the number of subscription-based streaming service application subscribers increased and became a trend in society. This could make people follow trends and move from movie piracy applications to users of subscription-based streaming service applications. Perceived cost was not a threat factor to consider when switching applications from movie piracy to subscription-based streaming service applications. This is not in accordance with the research of Gong et al. [22], which stated that inertia positively affects the threat of using new applications.

The R^2 results suggest that transition costs, sunk costs, and loss aversion explain 34.4% of the variance of the inertia. The remaining 65.6% was not explained in this study. There are several other variables that may help explain this, namely the incumbent system habit and uncertainty [50, 61]. Incumbent system habit is a factor that can represent cognitive misperception [45]. Incumbent system habit is a response that is automatically delivered when undergoing an activity [50]. Uncertainty is a factor that focuses on the user's lack of knowledge of new alternatives which can cause users spend considerable effort to find out about these alternatives [45].

6-2- Factors Affecting Intention to Use Subscription-Based Streaming Service Applications

In this study, there are also several factors that influence users' intentions to use subscription-based streaming service applications directly. Based on the coping theory, these factors are divided into two, namely primary appraisal and secondary appraisal. Primary appraisal can be classified into two concepts, namely opportunity appraisal and threat appraisal [22].

Convenience and personalization are opportunity appraisals used for this research. The results show that convenience ($p = 0.008$) had a positive influence on the user's intention to use, so H10 was accepted. This proves that the subscription based streaming service application can be accessed anytime and anywhere according to the wishes of the user. These results support previous research which states that convenience can affect a person's intention to use mobile payments [37]. However, someone's intention to use a subscription based streaming service application is not influenced by personalization ($p = 0.114$) from the application, so H11 is rejected. These results support previous research in the context of mobile service which found that personalization did significantly determine continued usage intention [62]. Personalization is used so that users feel the application provides movies according to their wishes so that users will continue to use the application. This result is not in accordance with the research of Wang et al. [39], which suggests that personalization affects a person's intention to use m-government applications.

Perceived cost is considered a threat appraisal in this study. The results demonstrate that the perceived cost ($p = 0.114$) did not affect the user's intention to use, so H12 was rejected. This case may be due to increasingly consumptive behavior in Indonesian society in recent years. Indonesian citizens tend to not think about the money spent when they want to get entertainment from service providers. This is also supported by recent data that indicates the increasing number of users of subscription-based streaming service applications year-over-year. However, the result does not support previous research which says that perceived price affects the intention to use the Netflix application [20].

Perceived controllability and morals are considered secondary appraisals in this study. The results demonstrate that the two factors ($p = 0.005$ & $p = 0.005$) had an influence on the intention to use, so H8 and H9 were accepted. This proves that the control that users have over the application and themselves can affect the desire to use subscription-based streaming service applications. The higher the control, the higher a person's intention to use the application. These results are consistent with previous research which stated that perceived controllability affects the intention to use mobile payments and morals affect the intention to use SVOD applications [18, 22]. Figure 2 presents the final model of the study.

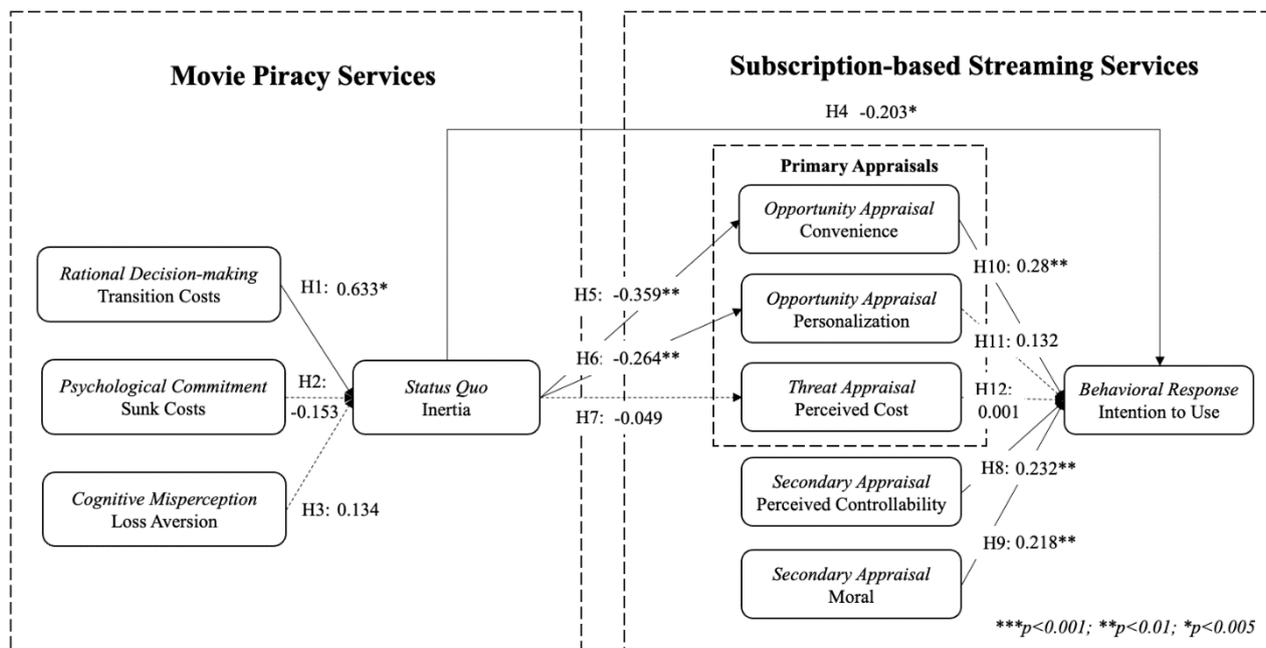


Figure 4. Final research model

7- Implications

Extant literature on streaming movies has primarily discussed the adoption, intention or willingness to pay for movie streaming applications. However, there has been limited research that studies both the movie piracy applications and the subscription based streaming service application phenomena. This study contributes to the literature on these two applications by explaining users' behavior in switching from one type of application to another. The status quo bias theory and coping theory used in this study also bridge the gap that existed in previous studies, which mostly use adoption theories such as TAM, TRA, and TPB. Hence, this study also adds to research on status quo bias and coping theory.

This study confirms that the effect caused by the status quo bias is direct, where inertia can negatively affect the intention to use an application. This reinforces previous research that found the level of a person's reluctance to switch can affect a person's intention to use the application. Then the effect of downward bias can also be confirmed in this study, where inertia can negatively affect primary appraisal, which is represented by convenience and personalization.

In coping theory, this study confirms that secondary appraisal affects behavioral response in that perceived controllability and moral can positively influence intention to use. This study also found a discrepancy with previous research. Sunk cost and loss aversion do not affect inertia in the context of movie streaming. The upward bias effect can also not be confirmed because in this study, the threat in the form of perceived cost is not influenced by inertia.

The results of this study could have an impact on companies that provide subscription-based streaming service applications. From the results of the study, several things must be considered, such as high transition costs that can increase the level of user inertia as well as convenience, morality, and perceived controllability that affect users' intention to use. The results of the study found that the transition cost affects the level of inertia of the user. Therefore, subscription-based streaming service application development companies can reduce transition costs when using their applications. Companies can shorten registration and streamline applications, such as support for older versions of Android, so that people who already use movie piracy applications can easily switch to using a subscription-based streaming service application.

In terms of convenience, companies can add some features to enhance the convenience of users. Companies can add features to download movies that are integrated on various devices, so that once downloaded it can be viewed from various devices owned by the user. This is in accordance with the recommendations of Xu and Gutiérrez [38], which state that the convenience factor can be increased so that the service can be accessed anywhere and anytime. With increased convenience functionality, it is hoped that it is possible to reduce the level of inertia of users of movie piracy applications.

In terms of perceived controllability, companies can make system designs that are easy and familiar to users of mobile applications so that users feel that they have high control over the application and thus increase their intention to use subscription-based streaming service applications. From a moral perspective, companies can work with the government to disseminate information about how the use of movie piracy applications is detrimental to the film industry. This is expected to increase the level of user control over moral decision-making and ethics. If society as a whole becomes more aware of the moral impact of piracy, it can increase the level of use of legal movie streaming applications [63].

8- Conclusion

This study aims to determine the effect of the inertia of movie piracy application users on the intention to use an alternative legal application, namely the subscription-based streaming service application. Unlike other studies in the extant literature, this study employed a combination of status quo bias theory and coping theory. The results of the study indicated that inertia proved to be an important barrier for users to switch from movie piracy services to legal subscription-based streaming services. Inertia (level of reluctance to switch), which was primarily contributed by transition costs, negatively affected intent to use. This implies that users' inertial habits in using existing movie piracy services can decrease their intention to use legal subscription-based streaming services. The results of the study are directly applicable to companies that provide subscription-based movie streaming services, especially in the context of designing features that lessen the effects of inertia. Understanding users' inertia and how it affects their intention is key in facilitating the transition from users who consume pirated movies to users who subscribe to legal movie streaming services. In terms of limitations, this study was conducted during the COVID-19 pandemic, during which there was a significant increase in the number of users of subscription-based streaming service applications. This might cause bias in respondents who are new to using the application. In addition, as this study was a cross-sectional survey with convenience sampling, the generalizability of the findings is limited. Future studies may expand the sampling to include broader respondent bases that represent users in different geographical areas and cultures within Indonesia. Furthermore, this study only examined the effects of inertia in the context of professionally generated movie streaming content. Future studies may also consider exploring other dimensions of movie streaming, such as user-generated streaming content, that have recently become popular.

9- Declarations

9-1- Author Contributions

Conceptualization, M.I.S., I.C.H. and A.N.H.; methodology, M.I.S., I.C.H. and A.N.H.; software, M.I.S.; validation, M.I.S., I.C.H., A.N.H., and S.K.; formal analysis, M.I.S.; investigation, M.I.S.; resources, P.O.H.P.; data curation, M.I.S.; writing—original draft preparation, P.O.H.P.; writing—review and editing, P.O.H.P., M.I.S., I.C.H., A.N.H., and S.K.; visualization, P.O.H.P. and M.I.S.; supervision, I.C.H. and A.N.H.; project administration, P.O.H.P.; funding acquisition, P.O.H.P. and A.N.H. All authors have read and agreed to the published version of the manuscript.

9-2- Data Availability Statement

The data presented in this study are available on request from the corresponding author.

9-3- Funding

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9-4- Institutional Review Board Statement

Not Applicable.

9-5- Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

9-6- Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancies have been completely observed by the authors.

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Appendix I: Survey Questionnaire

The survey questionnaire contains two sections regarding movie piracy applications and the subscription based-streaming service application, respectively. In the movie piracy application section, four constructs are discussed, namely transition cost, sunk cost, loss aversion and inertia. Then in the subscription-based streaming service application section, there are six constructs, namely convenience, personalization, perceived cost, perceived controllability, moral, and intention to use. Details of each indicator will be presented in the following table.

Variable	Code	Indicator	Source
Transition Cost	TC1	I don't want to use Online Subscriptions because it will cause problems during installation and use.	Tsai et al. [48]
	TC2	It took me some time and effort to switch to Online Subscriptions. For example: time and effort to learn a new application.	
	TC3	In general, switching to the Online Subscription app would be a problem for me.	
Sunk Cost	SC1	I have spent a long time watching movies using movie piracy applications.	Tsai et al. [48]
	SC2	I have spent a lot of energy learning movie piracy applications.	
	SC3	The time and effort I have spent in using the movie piracy application is not worth the Online Subscription.	
Loss Aversion	LA1	When I want to watch a movie, I will use a more familiar application.	Matzler et al. [46]
	LA2	I prefer online streaming applications that I am familiar with rather than using new online streaming applications.	
	LA3	When using an online streaming application, I will only use an online streaming application that is more well-established.	
Inertia	IN1	I will continue to use the movie piracy app because it is the app I need for my entertainment.	Tsai et al. [48]
	IN2	Even though the movie piracy application has a bad appearance and is ineffective, I will still use the movie piracy application.	
	IN3	I'm used to using a movie piracy application.	
Convenience	CON1	The Online Subscription application has been installed on my cellphone so it is convenient to use.	Kim et al. [37]
	CON2	The Online Subscription application provides convenience because it can be used anywhere.	
	CON3	The Online Subscription application provides convenience because it can be used in any situation.	
	CON4	The Online Subscription application provides convenience because the application is easy to use.	
Personalization	PER1	The Online Subscription application provides content that suits my needs.	Wang et al. [64]
	PER2	The Online Subscription application provides content according to my preferences.	
	PER3	In general, the Online Subscription Application provides content according to the genre I want.	
Perceived cost	PC1	When using the Online Subscription application, I will spend more money.	Luarn & Lin [65]
	PC2	There are several payment transaction barriers when using the Online Subscription application. For example: I have to create a credit card to subscribe.	
	PC3	I always have to spend money per month to pay for the Online Subscription application.	
Perceived controllability	PCA1	I understand how to use the Online Subscription application.	Gong et al. [22] and Juschten et al. [66]
	PCA2	I'm sure I can learn and understand how to use the Online Subscription application.	
	PCA3	In general, I feel there will be no problems when using the Online Subscription application.	
Moral	MOR1	When using the Movie Piracy app, I feel it is unfair to the filmmakers.	Hennig-Thurau et al. [67]
	MOR2	When I use the Movie Piracy app, I feel it is an unethical act.	
	MOR3	When using the Movie Piracy app, I feel like I'm hurting someone. For example: I feel like I'm hurting the filmmaker.	
Intention to Use	IU1	Now I watch movies using the Online Subscription application.	Kim et al. [37] and Oliveira et al. [68]
	IU2	I will use the Online Subscription application in the future.	
	IU3	I will try to use the Online Subscription application in my daily life.	
	IU4	In the future I predict I will use the Online Subscription application.	