

# Behavioral factors of intention to use pay later services. a systematic literature review

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**Abstract.** One of the current phenomena that plays a key role in digital transformation is commerce via mobile devices, known as m-commerce. Financial transactions involve selling or buying m-commerce service products using digital payments; one of them is to pay later. This research aims to determine the factors influencing customers' behavioral intentions to use Paylater in m-commerce applications. This study analyzes 30 accessible articles from well-known publishers in Scopus-indexed journals or the Web of Science. The result is 10 dimensions, that influence the intention to use pay later, namely behavior intention, social influence, information quality, perceived ease of use, financial literacy, hedonic values, perceived risk, perceived usefulness, trust, and habit. This paper produces a dimensional mapping model that will be used for further research.

## 1 Introduction

E-commerce is an important channel that provides unique features to help individuals promote and sell their products online [1]. In other words, e-commerce or electronic commerce is the activity of buying and selling goods via the internet [2]. According to Detikfinance, e-commerce or electronic commerce in Indonesia has existed since 1994 with the presence of IndoNet as the first Internet Service Provider (ISP) in Indonesia. To support the development of e-commerce in Indonesia, the Indonesian government has issued Presidential Regulation No. 74 of 2017 concerning the Roadmap for an Electronic-Based National Trading System strong support for e-commerce in Indonesia. Followed by online trading via cell phone, known as m-commerce [3]. M-commerce is an extension of the e-commerce ecosystem, where business activities are carried out wirelessly via mobile devices [4]. Local M-commerce, such as Tokopedia, Bukalapak, Traveloka, and Shopee have dominated the market [1]. Mobile commerce (m-commerce) is a service for buying and selling goods and services via wireless handheld devices such as cell phones [5]. This allows consumers to use mobile internet anytime and anywhere, without geographic or time restrictions [4]. This unique feature has provided convenience and flexibility to consumers in shopping online [6]. This provides many benefits, including increasing customer satisfaction [5].

The growth of e-commerce in Indonesia is supported by increasing smartphone penetration, direct investment by foreign investors [1], and the growth of digital payment services [7]. These services are known as financial technology (fintech) [8]. The development

of financial technology (fin-tech) is increasingly expanding by offering various products and services that provide many electronic financial options in society [9,10]. Many fintech companies are expanding their business with mobile platforms which are widely used by users today, especially for digital wallets [8]. Fintech provides various services that can make it easier for users to obtain financial products compared to traditional methods, such as transaction payments, insurance, etc [11,12].

Buy now, pay later (BNPL) is a fintech credit product that allows consumers to postpone installment payments without interest [13]. The service is a fast-growing new form of consumer credit provided by fintech companies around the world, including Affirm in the United States, Klarna in Sweden, Afterpay in Australia, and Ant and Tencent in China [14,15]. The existence of fintech has had a positive impact by providing solutions related to financial services for the community, one of which is the pay later service[16]. Pay later services shift payment of consumption costs in the future [17]. Pay late offers convenience in accessing credit installment services without complicated banking processes, proven by research whose results have a strong correlation with product variables (0.72 from Pearson Correlation Coefficient/PCC) and transactions (0.41 from Matrix Coding/MC) [18]. Therefore, many users rely on pay later to carry out product transactions [19].

The increase in use of the pay later service is projected to reach five million by 2025 [19]. Apart from being easy, this payment feature also does not require users to have money [20,21]. The user's payment will be

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covered first, then the user can pay back in installments [8], [13]. Based on a collaborative survey between Kredivo and Katadata Insight Center (KIC), 45.9% of Indonesians have used pay later. The majority of use of pay later services is to buy goods online, pay monthly bills and buy credit [22]. To use this feature, users must register by filling in the required data [8]. Because the method is easy and straightforward, many users are interested in using this feature [8], [19], [23].

To reduce the desire to use pay later, a study argues that financial literacy is needed so that users can evaluate every financial decision [10]. In addition, fintech (financial technology) companies are of the view that careful decisions from users can be a weakness [24] due to customer loyalty [19]. However, research regarding the use of pay later services is still very limited [25] and analyzing a person's intention to use pay later [8]. Previous research discusses decision theory and risk simulation analysis of using pay later services [19]. Therefore, this research was conducted to analyze the factors that influence the intention to use pay later in the m-commerce context. The main contribution of this research is to review the literature on how consumers adopt pay-later services to determine the factors that drive behavioral intentions to use such services. It is hoped that the results of this research will provide an understanding of the factors that influence a person's intention to use pay later services as a payment method. This research is a systematic literature review of articles published from 2018 to 2023.

## 2 Methodology

This section explains the systematic literature review approach method. According to Snyder et al., there are four basic steps in conducting a literature review, namely (1) designing the review by determining questions, (2) conducting the review by searching for relevant journals, (3) analysis by reviewing the literature and determining the final sample, (4) write a literature review. This research summarizes, integrates, and collects literature findings relevant to the research topic.

### 2.1 Design

Research begins by determining research questions. There are four stages in preparing a systematic literature review [26]. There are two research questions based on the approach developed to answer the research objectives, namely:

RQ1. "How is the development of pay later in online shopping payments in m-commerce?"

RQ2. "What are the dimensions that influence the use of pay later services?"

### 2.2 Search Terms/Keywords

The search term begins with determining the journal database portal that will be used. The databases used in this research are Science Direct, Wiley Online Library, IEEE, and Google Scholar. Next, relevant journals are selected using the keyword AND and the OR operator.

The keywords used for the search identified populations such as "pay later and pay later", "consumer behavior", "intention to use", "pay later in m-commerce" to highlight publications that have direct relevance to pay later in m-commerce.

### 2.3 Apply Inclusion and Exclusion Criteria

The initial step is to search for articles by selecting relevant journal repository databases or scientific publications which involves a systematic analysis process to ensure the literature meets the inclusion and exclusion criteria [27]. Inclusion criteria include selecting keywords on the subject of pay later and answering the research questions. The quality of articles used as references is influenced by the journal database selected before 2018. The database search publications used in this research are presented in Table 1.

**Table 1.** Database repositories

Inclusion Criteria	
Database	URL
Science Direct	<a href="https://www.sciencedirect.com/">https://www.sciencedirect.com/</a>
Wiley Online Library	<a href="https://onlinelibrary.wiley.com/">https://onlinelibrary.wiley.com/</a>
IEEE	<a href="https://ieeexplore.ieee.org/Xplore/home.jsp">https://ieeexplore.ieee.org/Xplore/home.jsp</a>
Google Scholar	<a href="https://scholar.google.com/">https://scholar.google.com/</a>
Exclusion Criteria	
Non-English Journal	Other literature, like e-book

### 2.4 Selection Process of Literature

Data search stages were carried out using several strategies such as period, type of article, article title, and subject area. Table 2 shows the filter process for each repository result. Based on the inclusion and exclusion criteria that have been carried out, a screening process is then carried out to select articles that are most relevant to the topic to be used. In the first filter, articles with the title "Pay Later" are selected with advanced searches adding the title, abstract, time period and keywords written in the article. Next, a second filter is carried out to evaluate the same article items for deletion. Finally, the results of the final selection of articles are included in the list of relevant articles.

**Table 2.** Article Filtering Results

Criteria	Science Direct	Wiley Online Library	IEEE Explore	Google Scholar
Corresponding with entered keyword	459617	129434	628	245000
Keywords correspond with the allfields	43	5	30	160

criteria include title, abstract, and published in 2018-2023				
Assessment by read full text journal quickly is appropriate to answer the research question in this study	18	1	6	5

Next, a search was carried out based on the keyword "Pay Later" which was then searched by adding the criteria of title, abstract, and time period from 2018 to 2023. In the final filter, the 30 most relevant articles were obtained based on the Scopus, Citecore, Highest Percentile and Crarivate indexes. The 30 articles were then assessed by reading the text as a whole and in-depth analysis.

### 3 Research Mapping

Research mapping through publication data regarding research topics with the keyword "Pay Later". This process is use to strengthen the research base. Data collection was carried out using the Publish or Perish application which was saved in the form of a RIS (Research Information System Citation) file. Next, we visualize the relationship between bibliometrics by entering the RIS file into Vosviewer software. Articles obtained from Publish or Perish resulted in 1000 articles from the Google Scholar database and 200 articles from Scopus. The results of keyword mapping from articles using Vosviewer are shown in Figure 1.

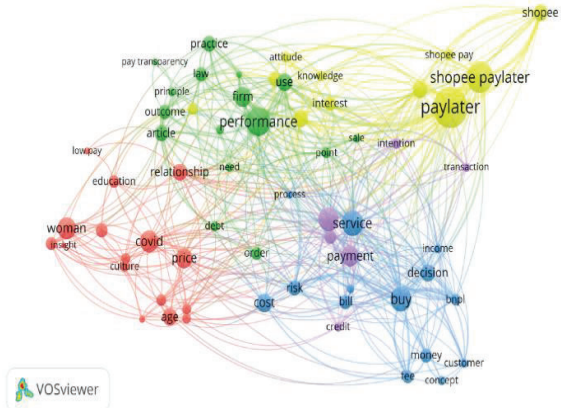


Fig. 1. Research Mapping based on keyword

Based on the keyword capture visualization in Figure 1, the analysis results provide an overview of the close relationship between pay later article keywords and transactions. Visualization analysis using Vosviewer was carried out to understand the latest research trends in the pay later field. This model is used to study behavioral intentions to use pay late. Articles were selected based on the Scopus, Citecore, High Percentile, and Clarivate indexes. The results of examining articles based on the index are presented in Table 3.

Table 3. List of Journal

Journal	Qty	Index (Scopus)	Cite core	High Percentile	Clarivate
Journal of Behavioral and Experimental Finance	1	Q1	9,0	94%	100%
IEEE Access	6	Q1	9,2	92%	√
European Journal of Operational Research	1	Q1	11,2	97%	√
China Economic Review	1	Q1	9,0	93%	√
Journal of Economic Behavior and Organization	1	Q1	3,0	63%	√
Procedia Computer Science	2	Q1/Q2	4,0	68%	-
Accounting & Finance	1	Q1	4,5	85%	√
Economic Analysis and Policy	1	Q1	6,9	87%	√
Telematics and Informatics	2	Q1	16,0	99%	√
Journal of Retailing and Consumer Services	3	Q1	16,1	96%	√
Review of International Business and Strategy	1	Q2	4,8	73%	√
Journal of Electronic Commerce in Organizations	1	Q3	2,6	46%	√
Australian Journal of Management	1	Q1	6,7	86%	√
Journal of Business Research	1	Q1	16,0	96%	√
International Journal of Electronic Commerce Studies	1	Q3	2,0	33%	√
Journal of Global Information Management	1	Q2	4,3	70%	√
Journal of Rural Studies	1	Q1	8,1	97%	√
Data in Brief	1	Q2	2,6	72%	√
Electronic Commerce Research and Applications	1	Q1	10,1	91%	√
International Journal of Information Management	1	Q1	41,9	99%	√

Heliyon	1	Q1	5,6	86%	√
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After determining the article index, the articles are then distributed from year to year. The total article index runs from 2018 to 2023. The results of the article index are presented in the graph Figure 2.

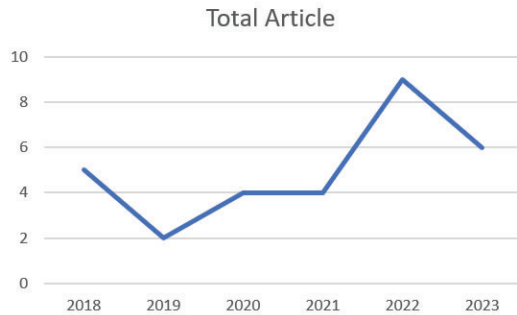


Fig. 2 Graph of Total Articles by Year

## 4 Result and Discussion

### 4.1 How is the development of pay later in online shopping payments in m-commerce?

Information and communication technology plays an important role in changing the traditional banking system into a digital system by introducing financial technology (fintech) services [28]. Fintech is a digital solution for financial management and makes financial transactions easier and safer for individuals and organizations [29–31]. These services enable consumers to access innovative financial services, such as online payments, mobile financial services, savings and investments [11], [32,33]. With technological advances in the competitive fintech industry, it is possible that this service will continue to develop and play an important role in making the financial world modern [28], [34]. The practices of these financial companies significantly influence consumers' intentions to use the service [23], [33], [35]. Fintech provides solutions related to financial services for the community, one of which is the Pay Later service [16].

Pay later is an online loan service that makes it easier for consumers to pay their transactions later, in one payment or in installments [36]. Initially, pay later has similar functions to a credit card, but has fewer access restrictions to pay later [16]. The pay later service function is the driving force behind the phenomenon of pay later adoption in the Indonesian market [12]. Pay later users must pay off their monthly balance at the time agreed with the service provider, this is one of the concepts of credit cards [37,38]. Users of the Pay Later service can pay bills in installments or once with varying interest depending on the pay later service used [16], [39]. However, to be able to use this feature, users need to register by providing user data such as KTP [8].

The number of Pay Later consumers continues to increase along with the growing use of e-commerce to meet various needs [16], [40]. Even though the use of pay later is increasing, this service is not the main means

of payment chosen by the public [36]. Based on the FIS survey results, digital wallets will be the most widely used e-commerce payment method in Indonesia in 2022. It is known that pay later will become the sixth payment method after digital wallets, bank transfers, on-site payments, credit cards and debit cards [41]. Currently, pay later is widely adopted by m-commerce companies, such as OVO, Gojek, Tokopedia, Traveloka, Shopee, etc [1], [8], [10], [19].

### 4.2 What are the dimensions that influence the use of pay later services?

First, a mapping of the methods, objects and analysis used in the research is carried out. The methods often used in research are questionnaire surveys, quantitative research, and qualitative research. The most frequently used research objects are students, mobile commerce users, and paylater users. The most frequently used analysis is SEM. Mapping of methods, objects and analysis is presented in Table 4.

Table 4. Mapping of the method, object, and analysis

Method	Object	Analysis
Qualitative [10], [42] Quantitative [3], [12], [13], [19], [36], [39], Quantitative and Survey Questionnaires [16], [23], [43], Questionnaires and Purposive sampling [8], Survey [15], [34], [44–47] Probability sampling and survey [5], Quantitative and Purposive sampling [1], Online survey [6], [48,49], [32], Cross-sectional survey [4], Longitudinal perspective [50], Literature Review [51,52], Quantitative cross-sectional [53], Questionnaires [54].	Student [1], [10], [23], M-commerce users [3,4],[6],[16], [43], [47–50], [52], [54], Mobile wallet users [32], Pay later users [8], [12], Shopee users [36], Store owner [39], Younger users (aged under 25) [15], SMEs [5], [44,45], Student and a number of researchers [34], Young people (aged 18-34)[42]	PLS-SEM uses SmartPLS [15], SEM [1], [8], [15], [50], PLS-SEM [3], [12], [32], [44,45], [48], Principal Component Analysis and Maximum likelihood estimation [36], Sensitivity Analysis [38], Conceptual framework [5], Bayesian analysis [19], Cronbach's alpha test and CFA [23], [49], CFA-PLS [34], Endogenous Switching Regression (ESR) [46], ANOVA and bivariate regression analysis [54], Cronbach's alpha coefficient [43], [47] PLS path modeling of XLSTAT [42]

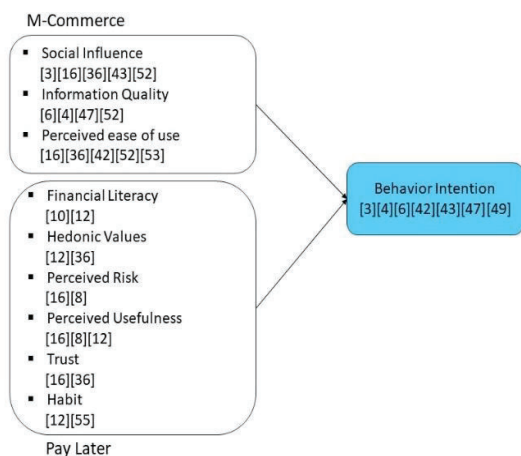
Next, the dimensions are most widely used by researchers. Existing variables are classified based on m-commerce and pay later. Several studies often discuss behavioral intentions or customer behavior using variables of perceived comfort, perceived ease of use, perceived risk, subjective norms [12], trust [3,4], perceived usefulness [36], service satisfaction, cultural and social influences [8]. As well as other variables used are presented in Table 5

Table 5. Classification of variables

Topic Narrowly	Variables
M-commerce	Perceived compability [5], [45], Perceived complexity [5], Perceived security [5], [45] Perceived costs [5], Employess IT knowledge [5], Organizational readiness [5], [45], Strategic oriented [5], Top management support [5], [44] Competitive

	pressure [5], [45] Government support [5], Social influence [3], [16], [36], [43], [52], Facilitating conditions [3], [4], [36], [43], Hedonic motivations [3], [4], Perceived risk, [3],[4], [8], [23], [34], [36], [42], Mimetic pressures [44], Coersive pressures [44], Normative pressures [44], Performance expectancy [4], [47], [52], Effort expectancy [43], Perceived effectiveness [43], Trust in vendor [43], Brand loyalty [6], Brand association [6], Brand perceived quality [6], Brand image [6], Website system quality [6], [42], Information quality [4], [6], [47], [52], Service quality [6], [4], [42], Perceived usefulness [1], [5], [6], [16], [42], [45], [53] Habit [4], [12], [47], [52], Consumer attitudes [42], [50], Consumer behavior [50] Loyalty [42], [50], User experience [51], Education level [46], Smartphone use [46], Off-farm employment [46], Social capital [46], Relative advantage [48], Perceived challenge [48], Co-developing [48], Influencing [48], Mobilizing behavior [48], Mobile ubiquity [42], Disposition to trust [42], User satisfaction [42], Behavior intention [3],[4], [6], [42], [43], [47], [49] Perceived ease of use [16], [42], [52], [53], Use user interface [42], Structural assurance [42], Perceived privacy [42], Personal innovativeness [47], Perceived enjoyment [52], [53], Intention to use [53], [34], Perceived ubiquity [53], Perceived behavior [49] Subjective norms [52], Emotional support [52],
Pay later	Financial literacy [10], [12], Lifestyle compability [16], Debt attitude influence [16], Confirmation [8], Satisfaction [8], Continuance intention [8], Hedonic values [12], [36], Effect of promotion [36], Perceived of technology security [36], Impulse buying [36], Price value [36], [4], Perceived risk [16], [8], Perceived usefulness [8], [12], [16], Trust [16], [36], Social influence [16], [36], [55], Perceived ease of use [12], [16], [36], Habit [12], [55]

Based on the questions above, this systematic literature review resulted in 69 dimensions that were discovered and distributed into m-commerce and pay later. Research on m-commerce has 58 dimensions used. There are 17 dimensions that most influence the use of pay later. These findings produce a model to answer the research objectives, the model is presented in Figure 3.



**Fig. 3** Pay Later in M-Commerce

There are 58 dimensions that influence the use of m-commerce. The 4 dimensions that most influence the intention to use services are (1) Behavior intention, namely the individual's motivation to carry out certain

behavior [3,4], [6], [42,43], [47], [49] (2) Social influence, leads to efforts to change the attitudes, beliefs, perceptions or behavior of other [52] (3) Information quality is the quality of the content of the information system as the suitability of the use of the information provided [4], [6], [47], [52], (4) Perceived ease of use, this is an important concept in understanding the acceptance of technology by users [16], [36].

Meanwhile, 6 dimensions have the greatest influence on the intention to use pay later services. (1) Financial literacy, those who lack financial literacy have higher levels of debt [10], [12], (2) Hedonic value which is influenced by hedonic shopping motivation [12], can also be interpreted as the level of happiness in using a service [36] (3) Perceived risk influences consumer perceptions in using new services [16], [8], (4) Perceived usefulness can influence a person's intention to use certain technology, especially in terms of its usefulness [16], [8], [12], (5) Trust, a high level of trust makes users comfortable making pay later transactions [16], [36] (6) Habit, refers to a person's habit of using pay later, because of certain facilities [12], [55]

## 5 Conclusion

This research aims to provide a literature review regarding the dimensions that influence the intention to use pay later services. The study approach used in this research is a systematic literature review. There are two questions discussed to help understand the development of pay later services in m-commerce and about the dimensions that influence intentions to use fintech, in this case pay later services, which have two detailed questions.

First, how is the development of pay later in online shopping payments in m-commerce? This question discusses the development of pay-later services in m-commerce. Users of pay later services continue to increase along with the use of m-commerce which continues to grow. Even though users of paying later are increasing, this service is not the main means of payment chosen by the public. According to the survey, the most widely used m-commerce payment method is digital wallets. Second, what are the dimensions that influence the use of pay later services? there are two detailed questions. The sub-questions are the methods, objects, and analysis used. The methods most often used in research are questionnaire surveys, qualitative research, and quantitative research. The research objects are students, mobile commerce users, and pay-later users. The data analysis used is SEM. Another additional question is what dimensions influence the intention to use payments in the future. Variables that influence the intention to use pay later are mapped.

The results of literature mapping show that the intention to use pay later is influenced by 10 dimensions, namely, behavior intention, social influence, information quality, perceived ease of use, financial literacy, hedonic values, perceived risk, perceived usefulness, trust, and habit. Future research needs to

confirm the new model by adding these variables to existing financial technology theories.

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