



# Smart Retailing: A Study Regarding The Purchase Intention of Beauty Products Vending Machine

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**Abstract.** Innovation on smart retailing continues to develop to provide customers a better shopping experience. Among many forms of smart retailing, vending machines are the one that is starting to be utilized by Indonesian retailers, specifically, by local cosmetic companies. Due to COVID- 19, SYCA & Rollover Reaction innovate their way of selling beauty products by placing vending machines in different locations. Despite many abandoned vending machines, those 2 local cosmetic companies still undergo this smart retailing strategy. According to the preliminary study, there is a gap in the purchase intention of Indonesian customers since only 9.6% of the respondents had actually gotten to the purchasing stage. Therefore, this research examines the factors that influence the purchase intention of beauty products vending machines. Mixed method is used in this research between 7th and 30th of May 2023 by conducting a semi-structured interview for the qualitative approach and online questionnaire to 210 females from Jakarta & Bandung area for the quantitative approach. The author selects interviewees and respondents via non-probability sampling method. The data were analyzed using open coding, descriptive statistics, and the PLS-SEM method. Results indicated that COVID-19 has an impact on the vending machine pandemic benefits. Furthermore, shopping experience perception, perceived ease-of-use of vending machines, and exclusive price promotion & product bundling on vending machines has an impact on the intention to purchase beauty products via vending machines. The findings of this research are expected to give insight related to vending machine utilization to cosmetic companies and/or other companies.

**Keywords:** Smart Retailing, Vending Machine, Purchase Intention, Beauty Products, PLS-SEM.

## 1 INTRODUCTION

In this fast-paced world, technology continues to develop rapidly in every aspect of human life, especially in communication. That constant innovation impacts on the way people do business, what used to be limited from 1 channel, many now are using multi channel strategies. Many strategies are developed by retailers to find the most effective

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way of selling their products, one of the most in trend channels is smart retailing. Smart retailing is the utilization of smart technologies in an offline shopping scenario to provide customers a better, quicker, and more convenient shopping experience (Ahmed et al., 2022). Nowadays, retailers are paying increasingly greater attention to the consumer shopping experience (Grewal et al., 2009). Using an interactive in-store technology results in a more pleasant consumer shopping experience, with the goal of increasing the sales. Among many forms of smart retailing, vending machines are the one that is starting to be utilized by Indonesian retailers.

Vending machines were initially used as a machine to dispense small goods such as snacks, drinks, and cigarettes when coins were inserted. Overtime, vending machines started to innovate by providing cashless payments and selling various goods from healthcare products to gold. Now, it is used by businesses as a strategy to improve customers' awareness of the brand and to provide an easier way for customers to purchase their products. It is not a forefront technology, but it is a unique approach of smart retailing for businesses that sell small goods to give consumers a different experience from buying it from the usual offline retail store. Vending machines are not very common to use as product providers in Indonesia. Seeing the value of coins is not quite worthy due to the different currency values. However, the problem of payment difficulties started to be solved with the development of cashless vending machines and the thriving innovation of QRis. People prefer contactless methods as it is considered to be a more hygienic way to make payments. 82% of respondents worldwide said they preferred contactless and cashless payments as a cleaner way to pay. Thus, with the increasing familiarity of the Indonesian population with cashless payment and the innovation of cashless vending machines, vending machines have become an alternative way of selling goods to the people of Indonesia.

But what we can see in the real world is that many vending machines were abandoned. It is not inline with the objective of a simple way of selling products, especially to Indonesian customers. However, an interesting topic to be discussed is that cosmetic industries are starting to use vending machines to sell their beauty products. Local cosmetic companies, SYCA and Rollover Reaction, started to set up vending machines in several big cities in Indonesia. They are willing to take the risk of using vending machines as a channel even though there are many deserted vending machines in Indonesia. SYCA and Rollover Reaction are the first 2 Indonesian cosmetic brands that utilize the use of vending machines to sell their beauty products. Preceded by SYCA in 2020, then followed by Rollover Reaction in 2021. SYCA became the pioneer by having their vending machines in several big cities: Jakarta, Bali, and Bandung. Both companies were pushed to innovate their way of selling products due to the pandemic. All of their vending machines provide cashless payment to achieve the hygiene and safe way of shopping.

To collect further data, the author conducted a preliminary research with 103 respondents focused in the Jakarta and Bandung area. The study was to get insight on consumer's purchasing intentions towards the use of vending machines in the beauty

industry. The data from the preliminary research showed that of 53 respondents that are aware of the cosmetic vending machines, 48 of them have seen the vending machines, but only 2 have ever bought from the vending machine. It showed that the impact of interactive technology on retailing experience needs to be taken into further research.

Based on previous literature, most of the research focused on interactive technology in general (Yang and Garnier, 2022). None specifically analyze the effectiveness of vending machines in the cosmetic industry. The relationship between consumer's need for unique shopping experience, interactivity within technology as a way of selling, and Indonesian consumer behavior that is not familiar with vending machines remain largely unexplored. Therefore, the author intends to further explore the purchase intention of Indonesian consumers with the use of vending machines in the beauty industry.

The objectives of this research are to find out the effect COVID-19 have on the purchase intention of beauty products via vending machines, to identify significant factors that influence the purchase intention of beauty products via vending machines, and to know other alternatives and/or strategies to significantly increase the purchase intention of beauty products other than vending machines.

## **2 LITERATURE REVIEW**

### **2.1 In-Store Technology Acceptance**

The Technology Acceptance Model (TAM) is made to know how users come to accept and use a technology (Davis et al., 1989). By seeing the perceived usefulness and the perceived ease of use of vending machines, the acceptability of the vending machines in Indonesia can be analyzed. Perceived Usefulness is defined as "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis et al., 1989). Meanwhile, Perceived Ease-of-use refers to "the degree to which a person believes that using a particular system would be free from effort" (Davis et al., 1989).

### **2.2 Purchase Intention**

According to Shah et al. (2012), purchase intention is a type of decision-making that examines consumers' motivations for purchasing a particular brand.

### **2.3 Shopping Experience Perception**

Following a particular study regarding the shopping experience of milk vending machines, a perception emerged that people's intention to purchase products from vending machines is because of their inner desire to have a fun and entertaining shopping experience (Kataike et al, 2019). Hence, the shopping experience perception is when people consider themselves to intentionally purchase from a

vending machine because of the fun pursuit that vending machines provide during the shopping experience.

## 2.4 Impact of COVID-19, Pandemic Cosmetic Shopping

The purchase pattern of consumers has changed since the COVID-19. In terms of beauty products, the consumers prefer to not try the products since it is becoming a place of spread for viruses. Customers also prefer to not have human interaction when purchasing products and services during the COVID-19 (Yang and Garnier, 2022: 2). Therefore the service provided by cashless vending machines has increased in the era of pandemic.

## 2.5 Importance of beauty products attributes

Every product can be described as a set of components or attributes. Customer's decision-making is based on conjoint analysis of different attributes of a product (Liesionis & Pilelienè, 2007). Examples of beauty products attributes are the following: Appealing packaging, Price, Material/Ingredients, and The availability of the shade/color. Several important attributes of beauty products need to be taken into consideration if they are to be purchased through vending machines.

## 2.6 Hypothesis Development

Hypothesis were developed referencing from previous studies:

**Hypothesis 1:** COVID-19 has an impact on the vending machine pandemic benefits.

**Hypothesis 2:** The beauty products attributes have an impact on the customers' shopping experience perception via vending machines

**Hypothesis 3:** Vending machines' pandemic benefits have an impact on the Intention to use beauty products vending machines.

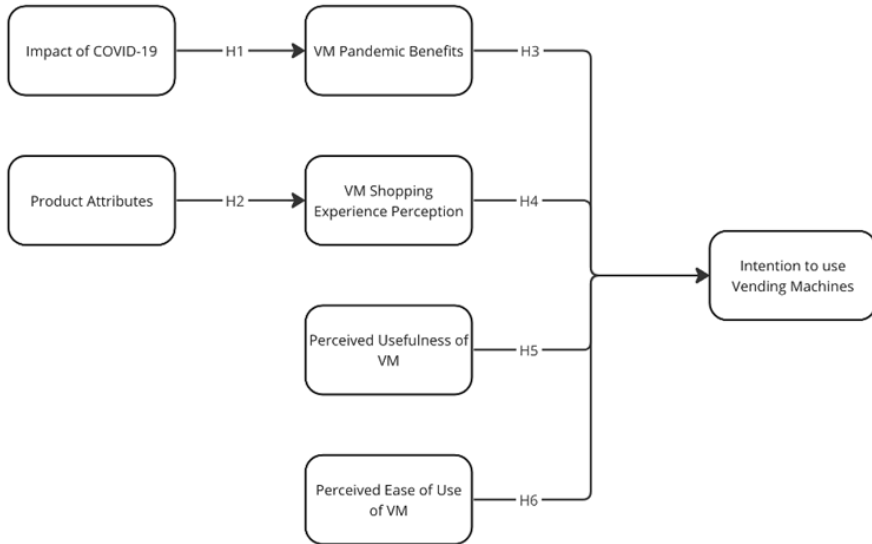
**Hypothesis 4:** Shopping experience perception has an impact on the Intention to use beauty products vending machines.

**Hypothesis 5:** Perceived usefulness of vending machines has an impact on the Intention to use beauty products vending machines.

**Hypothesis 6:** Perceived Ease of Use of vending machines has an impact on the Intention to use beauty products vending machines.

### Conceptual Framework

In this study, the author uses the framework (Figure 1) that consists of various variables that were mainly drawn from related studies.



**Fig. 1.** Conceptual Framework

(Source: Rombach et. al. (2022), Yu & Rahman (2018), Enax & Weber (2015), Jairoun et al. (2022), Rabbani & Musa (2020), Davis (1989), and Carolina, Wangi, and Siaputra)

the model used is an exploratory model where the author combined existing variables from previous literature in one main conceptual framework.

### 3 RESEARCH METHODOLOGY

#### 3.1 Research Approach

The approach of this research is a mixed method by combining qualitative and quantitative methods, in which a semi-structured interview will be conducted as the qualitative data collection and questionnaires will be spread as the quantitative data collection.

#### 3.2 Qualitative Approach

**Method.** In the literature review section, the author has obtained several variables from previous research that can influence the intention to use vending machines. However, these independent variables are not used specifically in the beauty industry. Therefore, the author will first extract information from customers of the beauty industry, in this case SYCA and Rollover Reaction customers, whether the same variables used by the previous researcher can be used on consumers of those 2 brands. Also to see if there is the possibility of adding other variables that cause the intention to use beauty products

vending machines. That information will be obtained by using a qualitative research method by conducting a semi-structured interview.

**Data Collection .** The population for the interviewees are local brands make-up users in Bandung and Jakarta area, females aged 19-28 years old. The sample of the interview will consist of two types of consumers. The first one is the person who had previously bought a beauty product of SYCA or Rollover Reaction via a vending machine. The second one is a customer of SYCA or Rollover Reaction that has never bought the product through a vending machine but is aware of the existence of the vending machines. For the second sample, the author will interview a certain number of interviewees until the data reaches saturation. A non-probability sampling technique will be used to collect the qualitative data. It is a non-randomized approach to choose the sample. Several questions will be asked in the semi-structured interview. It will act as the main guideline to gather in-depth information regarding the variables.

**Data Analysis.** After getting the result from the interview, the author will analyze the data by using coding. Coding is a method of categorizing and arranging data to recognize various themes and their correlations. It includes Open, Axial, and Selective Coding. After the qualitative data collection has been completed and coded, the results will be validated using a triangulation method, from interview results, previous literature, and netnography observation.

### 3.3 Quantitative Approach

**Method.** A questionnaire will be spread in the form of Likert scale in order to collect the quantitative data. Prior to the quantitative research, the author will conduct a pilot test. A pilot test can help the author spot any ambiguities and confusion in the information given to respondents. After the pilot test, the author will collect more respondents.

**Data Collection .** Data will be collected by spreading an online questionnaire. The primary focus for the respondents will be those who live in the Bandung and Jakarta area, and all of the respondents are in the given age range of 19 to 28 years old. In determining the number of samples, the author will use previous research as the reference. According to Malhotra's study in marketing research, 200 samples is the minimum sample size that should be included (2010). The sampling technique that the author will use is by a non-probability sampling technique. The quantitative approach will be done by spreading an online questionnaire using a Google Form. Questions from previous studies with similar topics and Interview Results are adopted for this research.

**Data Analysis.** After getting the result from the quantitative method, the author will analyze the data by using the partial least squares structural equation modeling (PLS-SEM) approach. From feel the data that includes generating the descriptive statistics,

followed by goodness of data that includes reliability & validity tests, and lastly is the hypothesis testing are all will be analyzed using the SmartPLS software (Hair et. al., 2021). A reliability analysis, validity analysis, collinearity test, coefficient of determining (R2) and Stone-Geisser Test (Q2), Hypothesis Testing using P-value and Bootstrapping, F Square Effect Size, Total Indirect Effect and Total Effect will be analyzed by using the SmartPLS software.

## 4 RESULT / FINDING

### 4.1 Qualitative Analysis

The author interviewed 4 interviewees during the time period of 7th of May 2023 until 15th of May 2023. The interview was conducted in an offline, one-on-one setting. All 4 interview transcripts will be used as the qualitative data and will be analyzed for further interpretation. All interviewees continue to deliver the same answers, thus the data collected is enough to reach saturation according to the author’s need. the author found 2 interviewees from Bandung area and 2 interviewees from Jakarta area. 3 interviewees are in the age range of 19 to 23 years old and 1 interviewee is in the age range of 24 to 28 years old. The author also discovers a new variable that will be added to the theoretical framework.

### 4.2 Interview Result

This section will concentrate on elaborating an additional variable that has been discovered from the interview result and coding, which is the Exclusive Price Promotion & Product Bundling on Vending Machines.

**Table 1.** Summary of Interview Result

Indicator	Description	Quotation	Listing Key Phrase
Exclusive Price Promotion & Product Bundling on Vending Machines	<p>Price Promotions intend to create urgency in the minds of customers, so they are persuaded to purchase (Aguilar-Barrientos, et. al., 2021).</p> <p>Bundling can be defined as the joint offer of two or more different products or services that are sold at a unique price (Staub &amp; Gaul, 2004). According to Stremersch &amp; Tellis, a product bundling</p>	<p><i>“Salah satu faktor lagi tuh ada yang <b>promo</b> atau <b>bundling</b> yang cuma ada di vending machine. Nah kalau kaya gitu mungkin lebih menarik”</i></p> <p><i>“kalau produknya di <b>diskon</b> di vending machine, aku jadi lebih pengen. Atau kaya misalnya ada <b>bundling</b> ternyata yang khusus ada di vending machine”</i></p> <p><i>“kadang di vending machine itu produknya itu kaya ada paketan</i></p>	<p>Interviewees consider vending machines as more attractive if they provide exclusive price promotion and product bundling.</p>

	<p>strategy yields higher revenues than unbundling prices (Stremersch &amp; Tellis, 2002).</p> <p>Promotion &amp; Product bundling can increase the purchase intention of customers (Wijaya &amp; Kinder, 2020)</p>	<p><b>bundling</b> gitu. Jadi karena ada <i>paketan produk itu juga, aku jadi tertarik buat pake si vending machine itu untuk beli produk.</i>"</p>	
Vending Machine Pandemic Benefits	<p>Vending Machine Pandemic Benefits include health and hygiene protocol of contactless payments and the convenience of 24/7 availability that reduces crowding in offline stores, reducing the risk of virus transmission.</p> <p>The intention of customers to use vending machines was found to be influenced by the pandemic benefits provided by vending machines.</p>	<p><i>"Kan ga ketemu orang, iya sih lebih higienis, jadi ga di pegang-pegang si produknya sama orang lain"</i></p> <p><i>"interaksi di vending machine itu ga se intens kaya di offline store, menurut aku akan mengurangi penyebaran virus. Terutama kalau di offline itu kan banyak kaya produk produk display yang dijadikan tester itukan. Which is semua orang bisa pake."</i></p> <p><i>"Lebih higienis karena itu produk ibaratnya ditaruh di mesin sama 1 orang, terus pas kita beli langsung dipegang sama kita. Jadi ga banyak tangan-tangan yang megang kalau dibandingin sama kita beli di offline store"</i></p>	<p>Interviewees believe that purchasing a product through vending machine is more hygienic if being compared to regular offline stores</p>
Vending Machine Shopping Experience Perception Benefits	<p>Vending machines are giving its customers a shopping experience that they can not get from anywhere else.</p> <p>The perception of shopping experience appears because of the thought that if they purchase goods from vending machines it will be perceived as fun and entertaining.</p>	<p><i>"Experience baru aja, jadi kaya mmm lucu ya gitu. Seru mencec-mencec."</i></p> <p><i>"Kenapa aku beli lewat vending machine karena itu satisfying bagi aku. Jadi kaya menurut aku lucu banget tuh mencec-mencec terus tiba-tiba ada produknya plung jatuh, terus kita ambil. Itu kaya seru sih"</i></p> <p><i>"Karena seru mencec-mencec dan banyak tema vending machine yang menarik perhatian orang gitu loh. Maksudnya kaya dengan adanya vending machine dan display produknya juga yang terpapar gitu, yang bikin menarik perhatian gitu, ya menarik perhatian aja untuk 'oh cobain nih beli dari sini' gitu."</i></p>	<p>Interviewees perceive vending machines as something fun and entertaining</p>



		<p>“Jadi kalau belanja lewat vending machine itu ya proses belinya <b>something new</b> aja buat aku. Jadi aku ngerasanya ini <b>fun</b>”</p>	
Perceived Usefulness	<p>Perceived Usefulness is defined as "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis et al., 1989).</p> <p>It provides a store where manpower is not needed and thus reducing labor cost, flexibility in time, saving time, and increasing profitability (Kasavana, 2003).</p>	<p>“Soalnya <b>cepat</b> sih, ga basa basi hahahah. <b>Ga delivery</b> juga.”</p> <p>“<b>Time saving</b> sih. Dan maksudnya kaya apalagi kalau gak ngantri, tinggal pencet, bayar, langsung dapet barang.”</p> <p>“Menurut aku <b>time saving</b> karena itu <b>self-service</b> banget dan prosesnya mudah aja sih cuma tik tik tik tik, masukin uang, keluar. Gitu, <b>cepat</b> sih.”</p> <p>“<b>Time saving</b> banget karena yaudah karena ga ada kasir, human cashier. Kita <b>self service</b> aja gitu “</p>	Interviewees believe vending machines are useful in terms of saving time.
Perceived Ease-of-Use	<p>Perceived Ease-of-use refers to "the degree to which a person believes that using a particular system would be free from effort" (Davis et al., 1989).</p>	<p>“Effortnya lebih sedikit sih kalau dibanding sama toko biasa. Kalau dibanding ecommerce sama offline, paling <b>gampang</b> si vending machine ini. Tapi untuk orang yang udah tau cara makenya sih atau yang udah pernah.”</p> <p>“Menurut aku karena mostly vending machine itu mirip mirip ya cara kerjanya, jadi menurut aku kalau sekalinya orang udah pernah nyoba vending machine, dia selanjutnya akan kaya udah familiar gitu. Ya kaya <b>gampang, mudah, dan ga butuh effort yang berlebihan</b>”</p> <p>“Kalau bagi aku kayanya <b>gampang</b>. Tapi kalau untuk orang orang yang ga tau cara nge operate vending machine sebelumnya itu kayanya harus ada informasi/<b>instruksi untuk tata cara belinya</b> itu gimana.”</p>	Interviewees believe that buying products from a vending machine is free from effort, but instruction on how to operate the vending machine is still required.

It can be seen from table 4.1 that all variables are validated alongside with a new additional variable which is the exclusive price promotion & product bundling.

## Data Source Triangulation

Data source triangulation method will be utilized by the author to validate this qualitative research through comparing results from interviews, netnography, and the literature review. The similarity of the data obtained from those 3 sources will be examined and thus the validity of the interview results can be assured. It can then be used to establish additional variables.

**Table 2.** Triangulation Check

Variable	Interview Result	Netnography Result	Literature Review
Exclusive Price Promotion & Product Bundling on Vending Machines	✓	✓	✓
Vending Machine Pandemic Benefits	✓	✓	✓
Vending Machine Shopping Experience Perception Benefits	✓	✓	✓
Perceived Usefulness	✓	✓	✓
Perceived Ease-of-Use	✓	✓	✓

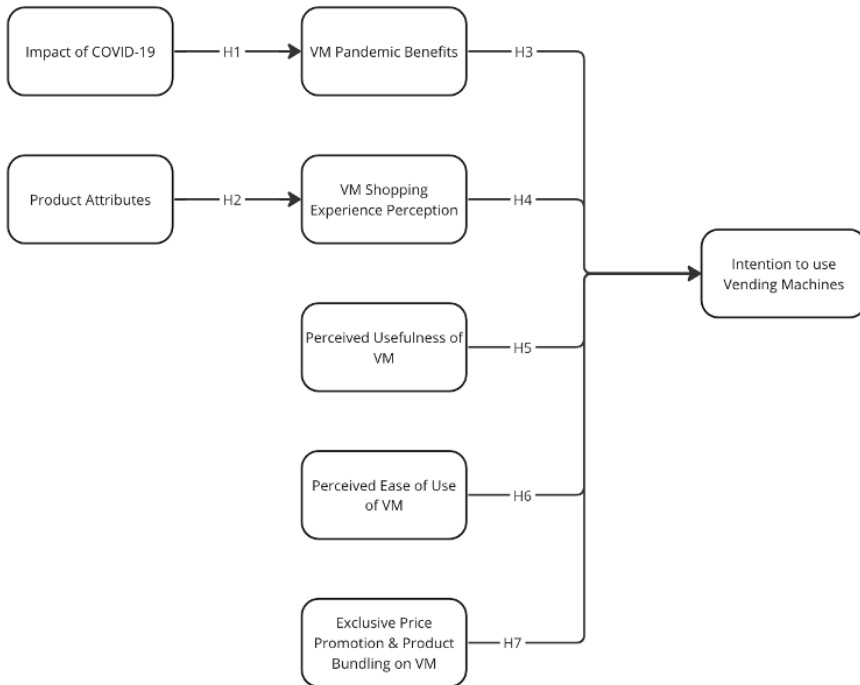
From table 2, it is known that all variables passed the validity check through the data source triangulation method.

### 4.3 Update Hypothesis and Conceptual Framework

Based on the data validation using triangulation check on Table 4.2, the author can conclude that the data has the same results for each variable. It is justified to use all those variables in this research with an additional variable of Exclusive Price Promotion & Product Bundling on Vending Machines. Thus, the additional hypothesis for the quantitative approach is:

Hypothesis 7: Exclusive Price Promotion & Product Bundling on Vending Machines has an impact on the Intention to use beauty products vending machines.

Following the development of the hypothesis, the author will proceed to update the conceptual framework accordingly.



**Fig. 2.** Update Framework

(Source: Rombach et. al. (2022), Yu & Rahman (2018), Enax & Weber (2015), Jairoun et al. (2022), Rabbani & Musa (2020), Davis (1989), Carolina, Wangi, and Siaputra, Wijaya & Kinder (2020), Zhang et. al. (2017).

The new conceptual framework consists of 5 independent variables, 2 mediating variables, and 1 dependent variable.

#### 4.4 Pilot Test Result

The author conducted the pilot test on the 28th of May 2023. The author conducted the pilot test to 40 respondents before distributing the questionnaire to a larger sample. The respondents consisted of 10 females from Jakarta area aged 19-23 years old, 10 females from Jakarta area aged 24-28 years old, 10 females from Bandung area aged 19-23 years old, and 10 females from Bandung area aged 24-28 years old. The author then analyzed the validity and the reliability of the 40 collected data using the SmartPLS Software.

The author tested the questionnaire’s validity using the content validity, convergent validity, and discriminant validity methods in SmartPLS software. Based on the validity test, the author removed 13 invalid indicators. At the end of the validity test, it can be concluded that all 23 indicators from 8 variables passed the validity test.

The author uses the internal consistency reliability test to evaluate the reliability of the latent variables. It is known that all variables are reliable. Therefore, after conducting the validity and reliability test, the author can follow through the next step which is by spreading the questionnaire to a larger sample.

#### 4.5 Quantitative Analysis

The total respondents for the quantitative approach is 210, the following are the results of the analyzed data

#### 4.6 Descriptive Analysis

**Table 3.** Descriptive Analysis for Framework

Variable	Indicator		Mean	Min	Max	Standard Deviation
Impact of COVID-19	IC1	Since COVID-19, I actively avoid contact with other people when I shop offline	6.233	2.000	7.000	1.120
	IC2	Since COVID-19, my preference for cashless payment has increased	6.357	5.000	7.000	0.633
Product Attributes	PA1	Importance that the beauty product has a long shelf life (expiry date)	6.224	3.000	7.000	0.757
	PA2	Importance that the beauty product packaging is appealing and has unique design	6.319	4.000	7.000	0.668
	PA3	Importance that the beauty product packaging is hygienic	6.386	4.000	7.000	0.593
	PA4	Importance that the beauty product made from a high quality ingredients	6.495	4.000	7.000	0.745
Vending Machine	PB1	A beauty product vending machine is	5.948	3.000	7.000	0.782

Pandemic Benefits		beneficial in current times because there is no human interaction				
	PB2	A beauty product vending machine is beneficial in current times because the payment is cashless	6.433	4.000	7.000	0.638
	PB3	A beauty product vending machine is beneficial in current times because I do not have to rely on delivery	6.476	4.000	7.000	0.595
Vending Machine Shopping Experience Perception	SEP1	I think buying beauty product from a vending machine would be fun	6.381	3.000	7.000	0.681
	SEP2	I think beauty product vending machine is an attractive technology	6.400	3.000	7.000	0.611
Perceived Usefulness of Vending Machine	PU1	Beauty product vending machine helps me purchase my beauty products more efficiently	6.500	5.000	7.000	0.642
	PU2	It is time-saving to purchase beauty products from a vending machine	6.448	5.000	7.000	0.632
	PU3	Overall, I find beauty product vending machine to be useful	6.438	4.000	7.000	0.616
Perceived Ease-of-Use of Vending Machine	PEOU1	I think beauty product vending machine is easy to learn how to use	6.386	4.000	7.000	0.654
	PEOU2	I would find beauty product vending machine to be clear and understandable	6.295	4.000	7.000	0.639
	PEOU3	Overall, I find beauty product vending machine easy to use	6.495	5.000	7.000	0.579

Exclusive Price Promotion & Product Bundling on Vending Machines	EPPPB1	I am willing to purchase beauty products from a vending machine if it is sold with a normal price, same as offline/online store	6.181	3.000	7.000	0.796
	EPPPB2	I am willing to purchase beauty products from a vending machine only if it provides exclusive price promotion only on vending machine	6.438	4.000	7.000	0.639
	EPPPB3	I am willing to purchase beauty products from a vending machine only if it provides exclusive product bundling only on vending machine	6.371	4.000	7.000	0.644
Intention to use Vending Machines	ITU1	I will not hesitate to use vending machines to purchase beauty products	6.305	3.000	7.000	0.685
	ITU2	I expect to use to vending machines to purchase beauty product in the future	6.362	2.000	7.000	0.678
	ITU3	I am willing to buy beauty products from a vending machine	6.400	3.000	7.000	0.626

The data obtained from descriptive analysis shows that the highest mean score is 6.500 which is the perceived usefulness of the vending machine variable. The statement means that a vending machine is considered useful by the respondents because it helps them to be more efficient in purchasing beauty products. On the other hand, the lowest mean score is 5.948 from the vending machine pandemic benefits variable. The statement shows that the majority of respondents believe there is no human interaction in purchasing beauty products vending machines and thus found it to be beneficial. Even though it has the lowest mean, the result of 5.948 still shows that the majority of the respondents agreed with the statement.

Based on Table 3, the analysis result shows that the highest standard deviation appears to reach 1.120, represented by the impact of COVID-19 variable. As stated by the National Library of Medicine, a standard deviation serves as an indicator of the extent to which data is dispersed in relation to the mean. Hence, it can be interpreted

that this statement gained a wide variety of answers from the respondents. Some respondents feel like they actively avoid human contact when they shop offline, and others feel like they do not intentionally avoid human interaction. Meanwhile, the lowest standard deviation score appears to be 0.579 represented by the perceived ease-of-use of vending machines. Low standard deviation means data are clustered around the mean. This statement implies that there is a high degree of similarity among the respondents' answers. Therefore, it can be interpreted that most of the respondents agree that they perceive vending machines as an easy-to-use technology.

### 4.7 Statistical Analysis

The data obtained from 210 respondents were processed by utilizing the SmartPLS software by using the PLS-SEM method. The author will process and analyze the data in order to generate answers for the research questions that are already determined. The built model of PLS-SEM of the research is shown on Figure 4.2.



Fig. 3. PLS-SEM Analysis Result

After finding out the validity, reliability, and collinearity of the indicators, the author drops 3 indicators from Product Attributes, Perceived Ease-of-Use of Vending

Machine, and Exclusive Price Promotion & Product Bundling on Vending Machine, which are PA2, PEOU2, and EPPB2. The data indicates that 20 indicators can be concluded as valid, reliable, and has no collinearity problem.

#### 4.8 Structural Path Significance

To assess the effect size and convergent validity, the author employed the Goodness of Fit (GoF) measure. As stated by Wong (2013), the GoF result is derived by multiplying the square roots of the average values of R2 and Q2. A GoF value exceeding 0.1 indicates that the model effectively explains the empirical data.

**Table 4.** Goodness of Fit Result

Variable	R2	Q2
Vending Machine Pandemic Benefits	0.1	0.1
Vending Machine Shopping Experience Perception	0.1	0
Intention to use Vending Machines	0.3	0.1
Average	0.167	0.067
GoF	0.105	

Through the calculation, it is known that the Goodness of Fit result is 0.105 which means it is higher than 0.1. GoF being above 0.1 indicates that the model is able to explain empirical data.

#### 4.9 Hypothesis Testing

Hypothesis testing is conducted by calculating the P-value and T-value from the SmartPLS software. A hypothesis is accepted only if the T-value is greater than 1.96 and the P-value is below 0.05.

**Table 5.** Hypothesis Testing

Hypothesis	Structural Path	Path Coefficient	T Values	P Values	Result
H1	Impact of COVID-19 → VM Pandemic Benefits	0.316	4.778	0.000	Accepted



H2	Product Attributes → VM Shopping Experience Perception	0.099	1.092	0.275	Rejected
H3	VM Pandemic Benefits → Intention to Use VM	0.003	0.036	0.972	Rejected
H4	VM Shopping Experience Perception → Intention to Use VM	0.314	3.490	0.000	Accepted
H5	Perceived Usefulness of VM → Intention to Use VM	0.050	0.654	0.513	Rejected
H6	Perceived Ease-of-Use of VM → Intention to Use VM	0.148	2.334	0.020	Accepted
H7	Exclusive Price Promotion & Product Bundling on VM → Intention to Use VM	0.169	2.770	0.006	Accepted

Figure 4 below shows the research framework after conducting the hypothesis testing and F square effect size.

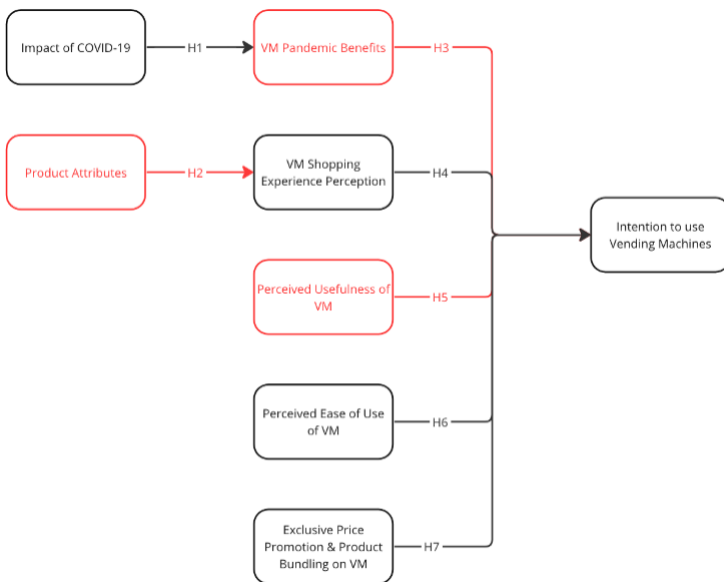


Fig. 4. Framework with Hypothesis Result

It can be seen from Figure 4.3 above that rejected hypothesis 2 and hypothesis 3 resulted in no mediating variables in the updated framework. Therefore, the author could not follow through with the Total Indirect Effect and Total Effect of The Mediating Test.

## 5 DISCUSSION

### **Hypothesis 1: COVID-19 has an impact on the vending machine pandemic benefits.**

Hypothesis 1 assumes that the behavioral change due to COVID-19 has an impact on the benefits provided by vending machines that are related to the pandemic. The benefits include the hygiene aspect of cashless payments and no human interaction. The T-value of the first hypothesis is 4.778 which is greater than 1.96 at 0.05 significance level. Therefore, based on the data analysis it can be said that the first hypothesis is accepted. The behavioral change of people during the pandemic regarding hygiene is still carried over until now, the post-pandemic period. The way people prefer contactless payment method, less interaction with people when purchasing a product, and the way they choose to not use any tester when buying beauty products are the reason why vending machines offer a benefits that customers could not get in a regular offline setting. Thus, based on that argument, previous literature, interview results, and questionnaire results, the author can conclude that the COVID-19 pandemic does have an influence on the vending machine pandemic benefits.

### **Hypothesis 2: The beauty products attributes have an impact on the customers' shopping experience perception via vending machines**

Hypothesis 2 assumes that cosmetic product attributes that includes long shelf life (expiry date), hygienic packaging, and high quality ingredients have an impact on the customers' perception regarding shopping experience through vending machines. Shopping experience means the fun & stimulating perception that the customer had when purchasing a product via vending machines. Data analysis done in this research rejected the second hypothesis, as it was proven that the T-value of this hypothesis is 1.092 which is lower than 1.96 and the P-Value is greater than 0.05. This analysis result contradicts with previous studies by Yu & Rahman (2018), Rombach et al. (2022), and Enax & Weber (2015) that stated extrinsic product attributes are positively associated with the benefits that vending machines provide in the context of shopping experience. The finding in this research is different with the finding of past similar research and it is justified by the preliminary research that stated the disadvantages of purchasing beauty products through vending machines. Preliminary research respondents were saying that they are lacking of product knowledge since they cannot ask the sales person regarding ingredients and shade. In addition, expiry date of the products cannot be seen from the vending machines display. Quoting the respondents "can't ask questions about the product", "no consultation", "the expiration date of the products can not be supervised 24/7!".

Important information regarding beauty products attributes such as expiry date, hygienic packaging, and high quality ingredients did not fully delivered to the customers when it is sold through a vending machines. The lack of product knowledge leads to no perception from the customer. Align with the respondents' & interviewees' statement, it is then concluded that product attributes does not have an impact on shopping experience perception since the information regarding the product attributes are not fully conveyed to the customers.

**Hypothesis 3: Vending machines' pandemic benefits have an impact on the Intention to use beauty products vending machines.**

Hypothesis 3 assumes that the pandemic benefits that customer can feel when they used vending machine have an impact on the customers' intention to use beauty products vending machine. Based on the data analysis, it is known that the third hypothesis is rejected since the T-value is 0.036 which is lower than 1.96 and the P-value is 0.972 which is greater than 0.05. This analysis result contradicts with previous studies by Jairoun et al. (2022) and Rombach et. al., (2022) that stated that there was willingness to use vending machines since vending machines hold the potential to promote precautionary and preventive measures to limit the spread of COVID-19.

Furthermore, it is supported by the qualitative approach of this study. Interviewees were saying that even though vending machines does not require human interaction, customers are still exposed to virus spread from the touch pad of the vending machines. Some of them are concerned regarding the cleanliness of the touch pad and thus stating that vending machine's pandemic benefits does not really affect their desire to buy from vending machines.

There is no guarantee that previous vending machine customers sanitize their hands, do not cough or sneeze around the machine, and keep a distance of at least 1 meter between customers. Based on that reason, the cleanliness of the machine and the touchpad is unknown. In conclusion, Vending machines' pandemic benefits do not have an impact on the Intention to use beauty products vending machines.

**Hypothesis 4: Shopping experience perception has an impact on the Intention to use beauty products vending machines.**

Hypothesis 4 assumes that customers' perception regarding fun and entertaining shopping experience through vending machine has an impact on the intention to purchase beauty products via vending machines. Data analysis of the hypothesis testing showed that Hypothesis 4 is accepted since the calculation of T-value for this hypothesis is 3.490, which is higher than 1.96 at 0.05 significance level. It is align with previous study conducted by Rombach et al. (2022) that stated vending machines experience benefits and willingness to pay more from a vending machine are positively correlated. People wants to purchase a product through vending machine since it gives them a new unusual experience where they could not get from online and offline stores.

It is then become the main reason why customers decide to purchase from a vending machine.

**Hypothesis 5: Perceived usefulness of vending machines has an impact on the Intention to use beauty products vending machines.**

Referring to Technology Acceptance Model (TAM), hypothesis 5 assumes that perceived usefulness of the technology has an impact on the customers' intention to use beauty products vending machines. According to data analysis, it is known that the fifth hypothesis is rejected since the T-value for this hypothesis is 0.654 which is lower than 1.96 and the P-value for this hypothesis is 0.513 which is higher than 0.05 significance level. The result is contradicting with previous studies that mentioned perceived usefulness as a variable that is significantly influence behavioral intention to use (Davis, 1989). Moreover, another study found that Perceived Usefulness has a positive relationship towards intention to use technology, in this case, vending machines (Rabbani & Musa, 2020).

The hypothesis finding in this research is different with the finding of past similar research and it is justified by the preliminary research and interview results. Some of the respondents & interviewees were saying that vending machines is not very useful in terms of no tester provided, probability of error and technical problem, lack of payment methods, and they also said that vending machines are not distributed equally and thus make it hard for the customers to find the vending machines. Because of those inconveniences of vending machine, the author can conclude that vending machine is not perceived as useful in the first place and therefore has no impact on the behavioral intention to use.

**Hypothesis 6: Perceived Ease of Use of vending machines has an impact on the Intention to use beauty products vending machines.**

Hypothesis 6 assumes that perceived ease-of-use of vending machines in terms of operational easiness has an impact on customers' intention to use beauty products vending machines. The T-value result of this hypothesis is 2.334 which is higher than 1.96 at 0.05 significance level. Hence, based on the data analysis, it can be concluded that the sixth hypothesis is accepted. The result is align with previous studies conducted by Caroline, Wangi, & Siaputra, they stated that ease of use of vending machines significantly influences the buying interest and decision making towards products that are sold through vending machines. The familiarity of Indonesian customer regarding the use of vending machine is still low and thus instructions on how to use the vending machine is very essential. If the machine can be considered as easy to use, the intention to use of the customer will increase. Thus, the author can conclude that the 6th hypothesis is accepted.

**Hypothesis 7: Exclusive Price Promotion & Product Bundling on Vending Machines has an impact on the Intention to use beauty products vending machines.**

Hypothesis 7 assumes that price promotion and product bundling that is exclusively offered in vending machines has an impact on the customers' purchase intention through vending machines. The result of the data analysis calculation for T-value is 2.770 which is higher than 1.96 at 0.05 significance level. Therefore, the author can conclude the last hypothesis is accepted. It is in line with previous studies that discussed price promotion and product bundling. promotion and product bundling can increase the purchase intention of customers (Wijaya & Kinder, 2020).

The result of the hypothesis testing is also supported by the interview and netnography approach conducted by the author. Interviewees considered vending machines as more attractive if they provide exclusive price promotion and product bundling. Price promotion and product bundling that are exclusively offered in vending machine will add an urgency in the mind of the customers. If there is no price deduction or additional benefits provided in the vending machine, customers will probably choose regular online or offline store. It indicated that exclusive price promotion & product bundling increase the behavioral intention to purchase.

## **6 CONCLUSION AND RECOMMENDATION**

According to the data analysis conducted by the author, it is known that COVID-19 does have an impact on customer behavior in terms of their concern regarding health and hygiene. Those behavioral change during the pandemic leads to benefits offered by vending machines that is related to health, namely the vending machine pandemic benefits. Those benefits include precautionary and preventive measures to limit the spread of COVID-19 by having no human interaction in the shopping process. Nevertheless, even though vending machine pandemic benefits does influenced by the COVID-19, those benefits are not significantly influence the intention to purchase from a vending machine. Based on the qualitative data analysis, it is known that customers are concerned regarding the cleanliness of the machine's touch pad and thus saying customers are still exposed to virus spread from the touch pad of the vending machines. In conclusion, benefits of the vending machine that is being provided in terms of health and hygiene due to COVID-19 does not influence the purchase intention of beauty products.

After evaluating the interview and questionnaire data result, there are several factors that significantly influence the purchase intention of beauty products via vending machines. According to the interview results, it is justified that pandemic benefits, shopping experience perception, perceived usefulness, perceived ease-of-use, and exclusive price promotion & product bundling have an influence on the intention to purchase. However, based on the quantitative data analysis, it is known that only shopping experience perception, perceived ease of use, and exclusive price promotion & product bundling that significantly influence the customers' intention to purchase through vending machines.

Shopping experience perception meaning customers believe that purchasing a beauty product through vending machine is entertaining and fun for them. Based on that beliefs, their intention to purchase a product is significantly influenced. Furthermore, perceived ease-of-use is an indicator from Technology Acceptance Model (TAM) that means operational easiness of vending machines. The analysis results indicate that the ease-of-use of the vending machines has an influence on the intention to use beauty products vending machine. But in addition, instructions on how to use the vending machines are necessary to be informed to the customer in order to increase the purchase intention. Moreover, exclusive price promotion and product bundling on vending machines also positively influence the purchase intention of beauty products vending machines. It was also validated by the interview, netnography, and questionnaire results.

Based on the interview result, there are 3 mentioned alternatives other than vending machines. The majority of the interviewees prefer to purchase beauty products from online store rather than through vending machines. They consider purchasing online to be more convenient, practical, and hygienic. Strategies that can be implemented through online selling is by offering flash sale and free delivery on their online platforms. Furthermore, offline store also become an alternative other than through vending machines. Following the answers from the interview, respondents from the questionnaires were asked to sort them from the most effective to the least effective. Based on the analysis, it is known that free delivery is the most effective, followed by flash sale, and the least effective is through offline stores.

Hence, the author suggests local cosmetic companies to focused more on providing free deliveries through their online platforms rather than by opening new offline branches. It is found to be more effective to increase the purchase intention of the beauty products.

## **Recommendations**

*Further Research.* In this research, the author found that several variables are insignificant in influencing the purchase intention. Therefore the author suggests further researchers to found other variables other than Vending Machine Pandemic Benefits and Perceived Usefulness which might have bigger effects towards the intention to purchase through beauty products vending machine. The second recommendation is to add other mediating variables since in this research the mediating test cannot be performed. It is due to rejected hypothesis around the mediating variables. The third recommendation is regarding the Goodness of Fit result of this research. It is considered low since the author used the non-purposive sampling method. Goodness of Fit showed how well sample data fits a distribution from a population with a normal distribution. It is suggested that further research reached more sample and thus will get a higher value of Goodness of Fit test. The last recommendation is to look for a more specified questionnaire respondents. By targeting customers who already

purchased a beauty product through vending machines, further research can have more insights regarding the factors influencing the purchase intention from a more experienced customers.

*Companies that Utilized Vending Machines* . Based on the result of this research, it is recommended that cosmetic companies or any other companies that utilized vending machine as a channel to sell their products to provide an instructions on how to operate the machine. It is known that Indonesian knowledge regarding the vending machine is still lacking and thus guidance on how to use is very essential.

Companies should also give price promotion and product bundling that is exclusively offered in vending machine. Therefore, there is an urgency in the mind of the customer to choose vending machine as a channel to get the product.

The next recommendation is to discussed the fun and exciting experience of the customer when they purchased through vending machine in the brands' online platforms. It could be through social media, websites, and hiring key opinion leaders (KOLs) to talk about the entertaining pursuit of buying beauty product through vending machines.

Furthermore, rather than investing on vending machines, it is better to allocate the funding to give free deliveries to online customers. Since it is considered as the most effective strategies other than vending machines.

## **Implications**

*Practical.* The results and findings from this study can be utilized by local cosmetic companies or other companies that is considering using vending machine as a channel to sell their products. The findings showed the factors influencing customer's purchase intention of beauty products vending machines. Thus, the results can be developed to create marketing strategies to have higher selling performances, higher exposure, and higher brand awareness from the existing and new customers. Furthermore, the recommendations provided in this study will also bring insights and benefits to local companies that are part of the retailing industry.

*Theoretical* . In this study, the author developed an exploratory framework by combining several theories from previous studies. It includes variables that has an effect on the customer's purchase intention of beauty products vending machines. Addressing the gap on the impact of interactive technology on retailing experience, the author bridged the gap by providing information related to the factors influencing the purchase intention. Several findings of this study contradicts with previous theories which are regarding product attributes, pandemic benefits, and perceived usefulness. As presented in Figure 4.11, the final variables that have a positive impact on the purchase intention are vending machine shopping experience perception, perceived ease of use of vending machine, and exclusive price promotion & product bundling on vending machine. Future studies in the area of interactive technology may use this study as reference

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