

EXAMINING THE EFFICACY OF THE INTERNET OF BEHAVIOUR (IOB) IN THE IDENTIFICATION OF CLIENT NEEDS ON ELECTRONIC COMMERCE PLATFORMS

ERIC WIJAYA¹, JONATHAN CHRISTIAN², CARLA VENNA³, JENNIE ROWAN⁴, IVAN SURACHMAN⁵, SELLYNA⁶, TANTY OKTAVIA⁷

^{1,7} Information System Management Department, BINUS Graduate Program – Master of Information System Management, Bina Nusantara University, Jakarta, Indonesia, 11480

^{2,3,4,5,6} Information Systems Department, School of Information Systems, Bina Nusantara University, Jakarta, Indonesia, 11480

¹eric.wijaya001@binus.ac.id, ²jonathan.christian004@binus.ac.id, ³carla.hanafiah@binus.ac.id, ⁴jennie.rowan@binus.ac.id, ⁵ivan.surachman@binus.ac.id, ⁶sellyna@binus.ac.id, ⁷toktavia@binus.edu

ABSTRACT

The Internet of Behaviour (IoB) is a strategic approach to integrating technology into company operations. Analyzing consumers' behavior through internet use to process the data. E-commerce platforms presently utilize the Internet of Behaviour to handle client behavior data, thanks to technological advancements. Through the analysis of client behavior data, the e-commerce platform will effectively cater to the requirements of customers. This research employed a theoretical framework to ascertain the determinants that impact online behavior and client requirements inside e-commerce platforms. This study employs a quantitative approach, using a questionnaire as the primary data collection tool, followed by a literature review. The study administered an online questionnaire to gather data from users of the e-commerce platform inside Jabodetabek, as well as from customers of diverse ages, genders, domiciles, and occupations. The findings from the survey participants indicate four distinct pathways: the impact of E-commerce platforms on customer needs, the influence of the Internet of Behaviour on customer needs, the influence of purchase intention on E-commerce platforms, and the impact of purchase satisfaction on E-commerce platforms.

Keywords: *Internet Of Behavior, Customer Needs, E-Commerce, Purchase Intention, Purchase Satisfaction*

1. INTRODUCTION

Internet of Behavior is one of the strategies for implementing technology for business where it will make a difference with competitors and is difficult to replicate because it focuses on business customer behavior [1]. IoB is a combination of three fields of science, namely technology, behavioral science, and data analytics science. Data is collected using technology and then converted into information and knowledge using analytics. Behavioral science is then applied to this extracted information to fully realize our contextual potential of observation, detection, and prediction [2].

Based on the 2021 Susenas Survey, 62.10% of Indonesia's population has accessed the Internet [3]. Buying transactions boldly through the Internet's e-commerce platform is one of the

Internet's activities. It is proven, according to available research, that up to 32 million Indonesians use the Internet to access e-commerce [4].

"Indonesia is the tenth largest country in the world, with e-commerce growth of 78 percent, ranking first." Meanwhile, Mexico is ranked second, with a 59 percent growth rate," said Septriana Tangjary, Director of Informatics Empowerment in 2019 [5]. In meeting the needs of its users, e-commerce utilizes the existence of the Internet of Behavior (IoB) to analyze the needs of its users. The Internet of Behavior is a data analysis process that examines human behavior on the Internet. As a result, IoB is expected to meet the needs of e-commerce platform users.

Enterprises will utilize the Internet of Business (IoB) to meet the expectations of their consumers through the utilisation of data, information, and behavioural patterns. Data can originate from

several sources, encompassing our engagement on social media platforms, geolocation data from smartphones, transactions made through credit cards, and even individual preferences about food. The Internet of Things (IoT) will collect additional data on our behavioural patterns and decisions as we are able to extract more insights from our regular actions [6]. In this research, researchers want to know and explore more about the use of IoB for customer needs and whether this IoB still plays an important role in the E-Commerce platform and can also find customer needs accurately.

2. LITERATURE REVIEW

A literature review is a scholarly composition that provides a contextual framework and showcases an understanding of the academic literature pertaining to a certain topic. The literature review encompasses comprehensive accounts of ideas, empirical evidence, and other scholarly resources derived from reference materials, which serve as the foundation for subsequent operations.

From the conceptualization of the issue to be examined to the conclusions of our investigation, research is needed to create a clear frame of mind. We can conclude that our research on the Internet of Behavior (IoB) has a big impact on the world, especially on people who love to use E-Commerce as a place to buy their daily needs or what they want. There are several variables associated with IoB itself, which will be explained.

2.1 Internet of Behavior

Marketing and psychology have been interwoven since the inception of advertising. So far, behavioral analysis and psychology have been able to offer new perspectives on the data collected by the Internet of Things (IoT). The Internet of Behavior (IOB) has the potential to be a potent new marketing and sales tool for companies and organizations all over the world. The IoB concept will enable businesses to evaluate past performance and estimate the future. Companies will use the data received through the IoT to organize their development, marketing, and sales processes. The “Internet of Behaviors” (IoB) has been identified as a top technology trend for 2021, with the COVID-19 pandemic playing a major role in its rise to prominence. The IoB aims to

2.5 Length of Internet Use

Internet use means that a person does some

analyze data and use that understanding to design and market new products, taking into account both human psychology and the interpretation of data acquired from users' online behaviors. This trend can have an impact on quality infrastructure as increased connectivity among companies may lead to higher customer expectations [6]. Internet buying intention, length of Internet use, and online shopping experience all influence a person's behavior when making transactions via the Internet [7].

2.2 Customer needs

In essence, a need is a person's conscious sense of deprivation. To put it another way, it is something that a consumer needs to feel satisfied with. After being influenced by culture, society, and a person's personality, a wish becomes a need [8]. The use of IoT as a tool to discover customer needs can help to find customer needs. IoB, which is a branch of IoT, becomes one of the options for analyzing customer satisfaction through customer behavior habits during transactions. Analyzing customer data through big data connected to a cloud server is the key to finding precise data so that customer needs can be met [9].

2.3 E-commerce

E-commerce is driven by the user's actions and decisions rather than being solely dependent on technology. The user initiates and terminates the interaction, and the transaction can be terminated at any time with a single click. When a customer enters an online store, e-commerce can track and record their actions, and this information can be used to better understand the customer's needs and preferences [10].

2.4 Internet Buying Intention

Internet buying intention is a condition where the subject has the possibility of having a relationship with several actions on the Internet. The actions that the person can take related to their internet buying intention are to choose any E-Commerce platform, buy their necessities, give information about their product on E-Commerce, and even compare the product's price on one E-commerce with the product's price on another E-Commerce [11].

activities on the Internet, such as education, communication, entertainment, and participating in online communities. The study aims to show that length of internet use is associated with some person's criteria, such as sex, grade level,

economic status, living arrangement, etc. One example of a living arrangement factor is that in the COVID-19 era, the length of internet use is consistently rising [12].

2.6 Online Buying Experience

According to research, the Online Buying Experience has some determinant factors such as experience in online shopping, the feeling that online platforms are easy to use, the customer feeling competent in doing online shopping, and the customer feeling comfortable with the online platform [13]. In the realm of e-commerce, consumers are required to assess their online purchasing encounter by considering their views pertaining to product details, payment methods, delivery conditions, available services, associated dangers, and other relevant factors [14].

2.7 Number of Purchase

The Number of purchases is the number that shows how many times a customer's money exchanges hands with the product they want. According to an article, several factors can make up the number of purchases such as the number of customers who visited the store, both online and offline, and also the percentage of customers who made purchases of those who came to the store, or in general term is purchase rate [15].

2.8 Purchase Satisfaction

Some factors can affect customer purchase satisfaction. The first factor is price perception. When a customer compares the price of a product purchased on one e-commerce platform to the price of the same product purchased on another e-commerce platform, it can affect their purchase satisfaction, whether this is a good or bad thing. The second factor is product quality. This factor indicates that when a customer pays a high price for a product but does not receive a product worth the price, it can affect their purchase satisfaction. And the last factor is the marketplace. Marketplaces can also affect customer satisfaction with their UI, their policies, etc. [16].

2.9 Promotion of Items

Every marketing campaign must have a sales goal. If they don't have a sales target, the company cannot develop. To reach their sales target, marketers or sellers have to promote their products. The term "promotion of items" or "sales of items" is important because it aims to increase customer interest in their product. Customer retention can be addressed to new consumers to encourage them to see and purchase their product, or to existing customers to encourage them to purchase more of their product [17].

3. RESEARCH METHODOLOGY

The research model and methodology for this research will be discussed in this section.

3.1 Research Model

Developing a strategic model involves conceptualising the research construction. This exemplifies the manner in which variables amalgamate to construct a hypothesis. Within this framework, a model refers to a conceptual representation of a process, while a strategy denotes the approach utilised to tackle a problem. Hence, a wide range of techniques may be employed to effectively tackle similar challenges. In order to facilitate the analysis and understanding of this study, the following components have been included: the framework, research model, and variable table. This figure is the basis for the creation of this study..

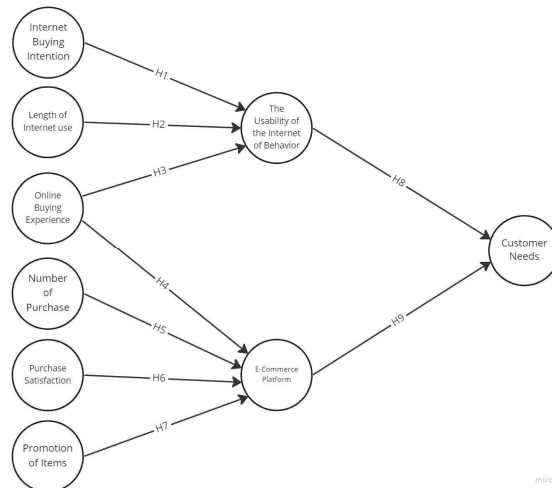


Figure 1: Research Model

A research model is a connected representation of the independent and dependent variables.

Hypothesis:

1. H1: Internet Buying Intention influences The Usability of the Internet of behavior.
 2. H2: Length of Internet Use Influences The Usability of the Internet of Behavior.
 3. H3: Online buying experience influences The Usability of the Internet of Behavior.
 4. H4: Online buying experience influences E-commerce platforms.
 5. H5: The number of purchases influences the E-commerce platform.
 6. H6: Purchase satisfaction influences E-commerce platforms.
 7. H7: Promotion of items influence E-commerce platform.
 8. H8: The Usability of the Internet of Behavior influences Customer needs.
 9. H9: E-commerce platforms influence Customer needs.
- By the research model, table 1 shows the research variable in detail from the definition, literature, and statement found in the literature.

Table I: Research Variable

Variable	Definition	Literature	Statement
Online Buying Experience (OBE)	Adopt from the internet. This section is usually obtained by asking how often users use the internet to shop.	C. Park and J. Jun, "A cross-cultural comparison of Internet buying behavior," International Marketing Review, vol. 20, no. 5, pp. 534–553, Oct. 2003, doi: 10.1108/02651330310498771.	<ol style="list-style-type: none"> 1. I usually use online e-commerce platforms for transactions. 2. I usually experience problems when using an e-commerce platform 3. I usually get benefits when using e-commerce platforms for transactions.
Length of Internet use (LIU)	The length of time users use to access the internet, especially e-commerce users.	C. Park and J. Jun, "A cross-cultural comparison of Internet buying behavior," International Marketing Review, vol. 20, no. 5, pp. 534–553, Oct. 2003, doi: 10.1108/02651330310498771.	<ol style="list-style-type: none"> 1. Users usually spend quite a lot of time using the internet. 2. The average Indonesian consumer spends about 4 minutes in one visit to an online shopping site.
Number of Purchase (NP)	How many times has the customer's money been exchanged for products in the store?	M. G. Helander and H. M. Khalid, "Modeling the customer in electronic commerce," Applied Ergonomics, vol. 31, no. 6, pp. 609–619, Dec. 2000, doi: 10.1016/S0003-6870(00)00035-1.	<ol style="list-style-type: none"> 1. I often make large purchases on the internet. 2. I often make purchases at the same store.
Variable	Definition	Literature	Statement



Internet Buying Intention (IBI)	Intention to behave (e.g. intention to purchase) is widely considered to be the most direct antecedent of behavior (e.g. actual purchase).	C. Park and J. Jun, "A cross-cultural comparison of Internet buying behavior," <i>International Marketing Review</i> , vol. 20, no. 5, pp. 534–553, Oct. 2003, doi: 10.1108/02651330310498771.	<ol style="list-style-type: none"> 1. I have the intention or willingness to buy goods through an application or website using an internet connection. 2. Using the internet makes it easier to purchase goods.
Variable	Definition	Literature	Statement
E-Commerce Platform (EC) Purchase Satisfaction (PS)	Software that enables the commercial process of buying and selling goods or services. A measure of how happy your customer is with the seller's product or service.	M. G. Helander and H. M. Khalid, "Modeling the customer in electronic commerce," <i>Applied Ergonomics</i> , vol. 31, no. 6, pp. 609–619, Dec. 2000, doi: 10.1016/S0003-6870(00)00035-1.	<ol style="list-style-type: none"> 1. E-commerce makes it easier for me to make purchases. 2. E-commerce Commerce which maintains my data when making transactions in E-Commerce. 2. I am satisfied with the service provided by the seller when I use the internet.
Customer Needs (CN)	The benefits that the customer wants are met by the product or service.	M. A. Camilleri, "Understanding Customer Needs in the Tourism, Hospitality and Services Industries," <i>Management</i> , pp. 29–36, Sep. 2017, doi: 10.1108/0978-3319-101016/s0003-6870(00)00035-1.	<ol style="list-style-type: none"> 1. I believe the E-Commerce platform understands and can fulfill my needs and wants 2. I have experienced an incident where the product I was looking for did not exist in the E-Commerce.
Promotion of Items (PI)	A form of marketing to create interest in a product or service. This can be done through advertising, public relations, and social media.	H. M. Khalid, "Modeling the customer in electronic commerce," <i>Applied Ergonomics</i> , vol. 31, no. 6, pp. 609–619, Dec. 2000, doi: 10.1016/S0003-6870(00)00035-1.	<ol style="list-style-type: none"> 2. The customer's desire to buy a product in a store is influenced by the store's environment, one of which is how to promote the product. 3. I like to buy products from the discount given.
The Usability of the Internet of Behavior (IOB)	The use of technology aims to address how data is better understood and used to build and promote new products from the perspective of human psychology.	M. Javaid, A. Haleem, R. P. Singh, S. Rab, and R. Suman, "Internet of Behaviours (IoB) and its role in customer services," <i>Sensors International</i> , vol. 2, p. 100122, 2021, doi: 10.1016/j.sint.2021.100122.	<ol style="list-style-type: none"> 1. IoB can be used in many ways by public or private entities. The IoB platform enables the development of the in-depth client understanding that every company needs. 2. IoB can assist the industry in obtaining large amounts of user information for customer analysis, product research, research observation, experimental research, and simulation results.

From December 2022 to January 2023, the questionnaire was delivered through social media platforms, including to 105 respondents who usually use the e-commerce platform for purchasing. The respondents have used an e-commerce platform. Table II contains the demographic information of the respondents.

SAMPLING

the pattern:

$$n = \frac{N}{1 + N(e)^2}$$

$$n = 170.029.800 / 1 + 170.029.800(10\%)^2 n = 170.029.800 / 1.700.299$$

$$n = 99,99$$

The N is used for the population that uses the internet, which is around 62,10% in Indonesia. The sampling shows that this study requires around 100 participants to identify those variables.

Table 2 Characteristics of Respondents

Demographic		Frequency	Percentage
Age	17-25	62	59%
	26-35	23	21,9%
	36-45	10	9,5%
	46-55	10	9,5%
	>55	0	0%
Gender	Male	46	43,8%
	Female	59	56,2%
Occupation	Student	15	14,3%
	College Student	37	35,2%
	Employee	23	21,9%
	Entrepreneur	20	19%
	Others	10	9,6%
Domicile	Jabodetabek	92	87,6%
	Out of Jabodetabek	13	12,4%

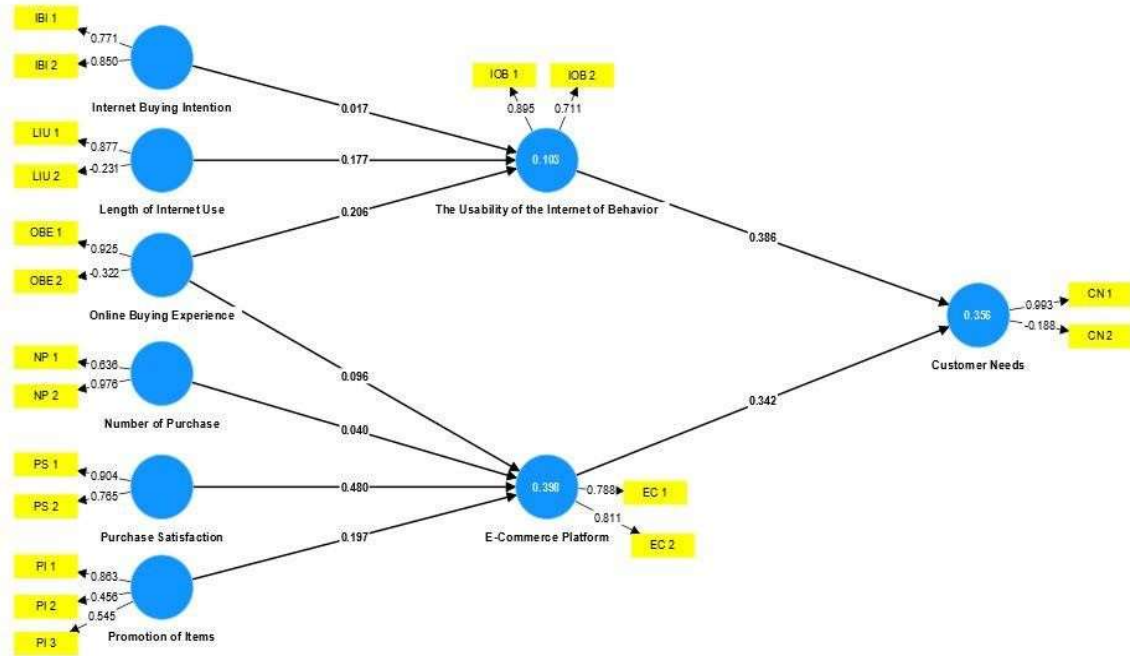


Figure 2: Validity Test

According to Table 2, Age was divided into 5 groups which are 17-25 age has 59 %, 26-35 age 21,9%, range 36-45 age has 9,5%, age 46-55 around 9,5%, and age >55 has 0%. For the gender, 43,85% of the participants were male and 56,2% of the participants were female. For occupation, 14,3% for students, 35,2% for college students, 21,9% for employees, 19% for entrepreneurs, 9,6% for other occupations. For domicile, 87,6%

for Jabodetabek and 12,4% for out of Jabodetabek.

A. Outer Model (Measurement Model)
 The purpose of doing the outer model test in this research is to classify which variables are valid and reliable. Validity testing involves testing the validity score of each variable, while reliability testing uses the values of composite reliability and Cronbach's Alpha.

Table 3. Convergent Validity Based On Outer Loading

Indicator	Outer Loading/Loading Factor		Indicator	Outer Loading/LoadingFactor	
	1st Test	2ndTest		1st Test	2nd Test
CN 1	0.993	0.993	NP 1	0.636	0.636
CN 2	-0.188	-0.188	NP 2	0.976	0.976
EC 1	0.788	0.788	OBE 1	0.925	0.925
EC 2	0.811	0.811	OBE 2	-0.322	-0.322
IBI 1	0.771	0.771	PI 1	0.863	0.863
IBI 2	0.850	0.850	PI 2	0.456	0.456
IOB 1	0.895	0.895	PI 3	0.545	0.545

IOB 2	0.711	0.711	PS 1	0.904	0.904
LIU 1	0.877	0.877	PS 2	0.765	0.765
LIU 2	-0.231	-0.231			

Table 3 shows that there are several approaches. We use smartPLS to process the data to test the research hypotheses. The outer model (the measurement model) and the inner model (the structural model) will be used in this analysis.

4. RESULTS AND DISCUSSIONS

After the questionnaire has been distributed, the replies will be collected for data processing. Gathered data will be processed with a Partial Least Squares-Structural Equation Modeling (PLS-SEM) indicators that don't meet the determined to be invalid and will be omitted for further research. After conducting convergent validity through outer loading, we will conduct convergent validity using the AVE value.

requirement of convergent validity, which is that the value has to be above 0.7 [18]. The indicators that do not meet the requirement are CN 2, LIU 2, NP 1, OBE 2, PI 1, and PI 2. As a result, these indicators are

Conducting convergent validity using the AVE value has a requirement that the value be above 0.5 [18].

Table 4. Discriminant Validity Based on Fornell - Larcker Criterion

Variable	CN	EC	IBI	IOB	LIU	NP	E	PI	PS
CN	0.715								
EC	0.474	0.800							
IBI	0.001	0.278	0.811						
IOB	0.503	0.342	0.113	0.808					
LIU	0.097	0.325	0.192	0.252	0.641				
NP	0.219	0.168	0.072	0.210	0.206	0.824			
OBE	0.163	0.292	0.305	0.273	0.353	0.091	0.692		
PI	0.389	0.397	0.078	0.386	0.185	0.216	0.139	0.645	
PS	0.453	0.593	0.212	0.338	0.302	0.159	0.343	0.370	0.837

Table 4 demonstrates that the variable has a higher correlation value than the other variables. This makes it easy to verify that the Fornell-Larcker Criterion satisfies the conditions.

The next step after validity testing is reliability testing. Reliability testing will use Cronbach's Alpha value and the composite reliability value [19]. Cronbach's alpha and composite reliability values greater than 0.7 indicate that the indicator is reliable.

Table 5 The Value of AVE, Composite Reliability, R Square, and Cronbach's Alpha

Variable	AVE	Composite Reliability	R Square	Cronbach's Alpha
CN	0.511	0.604	0.356	-0.155
EC	0.640	0.438	0.398	0.437
IBI	0.658	0.495		0.484
LIU	0.411	-0.842		0.418
NP	0.679	1.400		0.624
OBE	0.479	-0.191		0.119
PI	0.416	0.403		0.324
PS	0.701	0.651		0.587
ROB	0.653	0.551	0.103	0.487

Table 5 shows that three indicators don't meet the requirement because their values are under 0.5: LIU, OBE, and PI. It means the rest of the indicators can explain 50 percent of the constructs it creates for each of them [18].

Table 5 shows that no indicator is reliable because no indicator has a Cronbach's Alpha value greater than 0.7. However, NP and PS both have Cronbach's alpha values between 0.5 and 0.7, indicating that they are moderately reliable for research purposes. In conclusion, all indicators that have already proven valid and reliable can be used for further research.

B. Inner Model (Structural Model)

The coefficients of determination (R^2 values) and the level and importance of the path coefficients are employed in this study as the main evaluation criteria for PLS-SEM outcomes once reliability

and validity have been established.

R^2 measures how well the research model predicts the future. The R^2 value of Internet of Behaviour (IOB), which is displayed in Table V as the results of the current investigation, is 0.103. To continue utilizing the E-Commerce platform means that IBI, LIU, NP, OBE, PI, and PS can explain 10.3 percent of the variance in IOB. The remaining 89.7 percent is made up of factors not examined in this research. E-Commerce (EC) has an R^2 score of 0.398. This indicates that

39.8 percent of the variance in EC can be explained by LIU, NP, and OBE. The remaining

60.2 percent is made up of factors that were left out of this study. R^2 values of 0.20 are regarded as high in fields like consumer behavior, demonstrating how highly predictive the research models in this study are.

Table 6. Path Coefficients And T-Statistics

Path	Path Coefficients	T-Statistics (O/ST DEV)	Information
EC -> CN	0.342	2.405	Significant
IBI -> IOB	0.017	0.116	Insignificant
IOB -> CN	0.386	2.789	Significant

LIU -> IOB	0.177	0.882	Insignificant
NP -> EC	0.040	0.290	Insignificant
OBE -> EC	0.096	0.692	Insignificant
OBE -> IOB	0.206	1.130	Insignificant
PI -> EC	0.197	1.548	Significant
PS -> EC	0.480	3.762	Significant

This study used the bootstrapping technique to calculate the path coefficients of the Inner Model (Structural Model) to determine their significance level. In this study, a one-tailed and two-tailed test with a significance threshold of 0.05 was utilized to examine the research hypotheses. One-tailed and two-tailed tests generate the same result for the Path Coefficients and T-Statistic ($|O/STDEV|$). We can therefore infer that the path coefficient is substantially different from zero and that the hypothesis is accepted if the size of the t-value is more than 1.27.

Table 6's findings from the current study indicate that four acceptable hypotheses have t-values greater than 1.27. These hypotheses include EC to CN, PI to EC with the highest value, PS to EC, and IOB to CN. On the other hand, the five hypotheses are disproved because their t-values are smaller than 1.27. The rejected hypotheses are IBI to IOB, LIU to IOB, NP to EC, OBE to EC, and OBE to IOB.

C. Discussion of the Results

The relation between E-Commerce Platforms and Customer Needs has significant results, which means H9 is accepted based on this result test. E-commerce refers to the platform where customers fulfill their needs by doing transactions. The results show e-commerce could be a platform for customers to find their needs through this platform.

Internet Buying Intention was found to have an insignificant effect on The Usability of the Internet of Behavior based on the result. This result means H1 is not accepted. Internet buying intention refers to the customer's intention to do transactions through the Internet. Based on the result, Internet Behavior is not affected by the customer's intention to buy something through the Internet.

Based on the result, The usability of the Internet of Promotion of Items was found to have a significant effect on E-Commerce based on the result. This result approved H7 is accepted. Promotion of items refers to how the marketing strategy influences the customer to fulfill their needs with the product that they are selling on an e-commerce platform. Based on the result, it shows that the promotion of items is effective for making an e-commerce platform as the platform that is used to fulfill the customer's needs.

The relation between Purchase Satisfaction and the E-Commerce Platform is significant based on the result, which means H6 is accepted. Purchase

Behavior was found to have a significant effect on customer needs. The result has approved H8 which means H8 is accepted. It also shows the Internet of Behavior as the strongest factor in defining customer needs.

Length of internet use was found to have an insignificant effect on The usability of internet of behavior. Based on the result, H2 is not accepted. Length of Internet use refers to how often the customer uses the Internet to access e-commerce. It shows the usability of the Internet of Behavior is not affected by the length of Internet use by customers.

The number of purchases was found to have an insignificant effect on the E-Commerce Platform. The result shows that H5 is not accepted. The number of purchases refers to how frequently customers make e-commerce transactions. This result shows that e-commerce as a platform for finding the customer's needs is not affected by the number of customers making purchases.

Online buying experiences were found to have an insignificant effect on E-Commerce Platforms. The result shows that H4 is not accepted. Online buying experience refers to the customer's experience when they were doing a purchase transaction. This result shows e-commerce as the platform for finding the customer's needs is not affected by the online buying experience.

Based on the result, the online buying experience was found to have an insignificant effect on the usability of the Internet of behavior. It shows that H3 is not accepted in this study. Online Buying Experience refers to the customer's experience while using the e-commerce platform for doing purchase transactions, in which the experience is recorded for customer needs analysis. This result shows the usability of the Internet of Behavior for finding customer needs is not affected by the online buying experience.

satisfaction refers to a customer's satisfaction after they have completed purchase transactions in e-commerce. This result shows e-commerce platforms as the platform for customers to fulfill their needs, which is affected by purchase satisfaction.

5. CONCLUSION

An issue prevalent in the majority of the E-Commerce sector nowadays is the insufficient utilization of the Internet of Business (IoB) to comprehend the requirements of customers [20]. This study aims to ascertain the specific criteria

that researchers seek to investigate to gain a deeper understanding of the utilization of IoB for consumer requirements. Additionally, it seeks to determine the extent to which IoB continues to have significance in the E-Commerce platform and its ability to effectively identify client demands. The results of the study suggest that the E-commerce Platforms (EC) and the Internet of Behaviour (IOB) exert a substantial influence on Customer Needs (CN). Additionally, the study revealed that Customer Needs (CN) were highly impacted by the Promotion of Items (PI) and Purchase Satisfaction (PS). The study's findings indicate that the Internet of Things (IoT) plays a pivotal role in the E-Commerce platform, offering valuable assistance in identifying client needs and preferences.

The participants' acceptability of the E-Commerce platform and their intention to continue purchasing from it were assessed through observation. Based on the analysis of these and other pertinent variables in the research, the overarching finding has substantial value for e-commerce platforms seeking to ascertain the needs of the typical client and enhance their platform [21]. To enhance client acquisition and increase brand recognition, all e-commerce platforms [22] must prioritize the implementation of the IOB system.

REFERENCES

- [1] K. Panetta, "Gartner Top Strategic Technology Trends for 2021," *www.gartner.com*, Oct. 19, 2020. <https://www.gartner.com/smarterwithgartner/Gartner-top-strategic-technology-trends-for-2021>
- [2] M. Rajak, "What exactly is the Internet of Behaviours? And how is the planet evolving as a result of services by the Internet of Things in 2021?" *www.linkedin.com*, Mar. 2021. <https://www.linkedin.com/pulse/what-exactly-is-the-internet-of-behaviours-and-how-is-the-planet-evolving-as-a-result-of-services-by-the-internet-of-things-in-2021-m-rajak/>
- [3] Directorate of Finance, Information Technology, and Tourism Statistics of Indonesia, *Telecommunication Statistics in* 14, no. 1, pp. 59–71, Mar. 2018, doi: 10.17270/j.log.2018.268.
- [10] M. G. Helander and H. M. Khalid, "Modeling the customer in electronic commerce," *Applied Ergonomics*, vol. 31, no. 6, pp. 609–619, Dec. 2000, doi: 10.1016/s0003-6870(00)00035-1.
- [11] R. Yuliana and M. Hamdani, "STUDY OF ONLINE BUYING INTENTION STUDY OF 'ONLINE SHOPPING,'" *International Journal of Economics, Business and Accounting Research (IJEBAR)*, vol. 4, no. 4, Dec. 2020, doi: 10.29040/ijebar.v4i4.1520.
- [4] Indonesia 2021. BPS-Statistics Indonesia, 2022. [Online]. Available: <https://www.bps.go.id/publication/2022/09/07/bcc820e694c537ed3ec131b9/statistik-t-elekomunikasi-indonesia-2021.html>
- [4] VNA, "Indonesian online consumers increase by 88 percent in 2021 | World | Vietnam+ (VietnamPlus)," *VietnamPlus*, Dec. 30, 2021. <https://en.vietnamplus.vn/indonesian-online-consumers-increase-by-88-percent-in-2021/220049.vnp> (accessed Dec. 13, 2022).
- [5] P. KOMINFO, "Kemkominfo: Pertumbuhan e-Commerce Indonesia Capai 78 Persen," *Website Resmi Kementerian Komunikasi dan Informatika RI*, Feb. 28, 2019. <https://www.kominfo.go.id/content/detail/16770/kemkominfo-pertumbuhan-e-commerce-indonesiacapai-78-persen/0/sorotan-media>
- [6] M. Javaid, A. Haleem, R. P. Singh, S. Rab, and R. Suman, "Internet of Behaviours (IoB) and its role in customer services," *Sensors International*, vol. 2, p. 100122, 2021, doi: 10.1016/j.sintl.2021.100122.
- [7] C. Park and J. Jun, "A cross-cultural comparison of Internet buying behavior," *International Marketing Review*, vol. 20, no. 5, pp. 534–553, Oct. 2003, doi: 10.1108/02651330310498771.
- [8] M. A. Camilleri, "Understanding Customer Needs and Wants," *Tourism, Hospitality & Event Management*, pp. 29–50, Sep. 2017, doi:10.1007/978-3-319-49849-2_2.
- [9] J. M. V. Cedeno, J. Papinniemi, L. Hannola, and I. Donoghue, "Developing Smart Manufacturing Business," *Logforum*, vol. 14, no. 1, pp. 59–71, Mar. 2018, doi: 10.17270/j.log.2018.268.
- [12] Y. Kwak, H. Kim, and J.-W. Ahn, "Impact of Internet usage time on mental health in adolescents: Using the 14th Korea Youth Risk Behavior Web-Based Survey 2018," *PLOS ONE*, vol. 17, no. 3, p. e0264948, Mar. 2022, doi: 10.1371/journal.pone.0264948.
- [13] S. Slamet, F. D. Finalia Sari, I. Indrayati, and I. Azmala, "MILLENNIAL CUSTOMER LOYALTY IN ONLINE SHOPPING ON DIGITAL PLATFORMS: A PERSPECTIVE OF NET PROMOTER SCORE," *Jurnal Bisnis dan Manajemen*, vol. 22, no. 2, pp. 142–150, Mar. 2023, doi: 10.24090/jbm.v22i2.142-150.

- 162–175, Sep. 2021, doi: 10.24198/jbm.v22i2.758.
- [14] H. Afrashteh, N. Azad, and S. V. Tabatabaei Hanzayy, “The effects of online shopping on the customer loyalty,” *Management Science Letters*, vol. 4, no. 9, pp. 2077–2086, 2014, doi: 10.5267/j.msl.2014.8.013.
- [15] “Number of Purchases,” *intercom. help*. <https://intercom.help/flow-solutions/en/articles/3451200-number-of-purchases> (accessed Jan. 31, 2023).
- [16] S. Putra, Risanda Alirastra Budiantoro, Bilkis Aulia Luxfiati, and Mega Wahyu Widawati, “CONSUMER SATISFACTION BEHAVIOR WHOM PURCHASE CHINESE SMARTPHONE IN SOLORAYA,” *Jurnal Aplikasi Manajemen*, vol. 18, no. 3, pp. 588–596, 2020, Accessed: Jan. 31, 2023. [Online]. Available: <https://jurnaljam.ub.ac.id/index.php/jam/article/view/1671/1475>
- [17] D. Kuswardani and N. Wibisono, “STRATEGIC ROLE OF SALES PROMOTION IN INCREASING THE NUMBER OF VERMOX DRUG SALES,” *Economics & Business Solutions Journal*, vol. 2, no. 2, pp. 1–7, 2018, [Online]. Available: <https://journals.usm.ac.id/index.php/ebsj/article/download/1247/813>
- [18] Meiryani, “MEMAHAMI VALIDITAS KONVERGEN (CONVERGENT VALIDITY) DALAM PENELITIAN ILMIAH,” *Accounting*, Aug. 12, 2021. <https://accounting.binus.ac.id/2021/08/12/memahami-validitas-konvergen-convergent-validity-dalam-penelitian-ilmiah/>
- [19] N. Wahyuni, “Uji Validitas dan Reliabilitas,” *BINUS QMC*, 2014. <https://qmc.binus.ac.id/2014/11/01/u-j-i-v-a-l-i-d-i-t-a-s-d-a-n-u-j-i-r-e-l-i-a-b-i-l-i-t-a-s/>
- [20] T. Oktavia, F. L. Gaol, T. Hosoda, and A. Syahir, “Transformative Sport Science Using Social Media as a Collaboration Tool,” in 7th International Conference on ICT for Smart Society: AIoT for Smart Society, ICISS 2020 - Proceeding, 2020. doi: 10.1109/ICISS50791.2020.9307537.
- [21] T. Oktavia, H. Prabowo, and Meyliana, “The general components of e-learning framework for higher institution: A systematic literature review,” *Journal of Telecommunication, Electronic and Computer Engineering*, vol. 8, no. 3, 2016.
- [22] T. Oktavia, Meyliana, H. Prabowo, R. Kosala, and S. H. Supangkat, “A conceptual social learning ontology for higher education in e-learning 2.0,” in Proceedings of 2016 International Conference on Information Management and Technology, ICIMTech 2016, 2017. doi: 10.1109/ICIMTech.2016.7930323.