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Analysis of the Impact of Digitalisation of Devices, Digitalisation of Platforms, and Digitalisation of Media on Perceptions of Online Shopping among Millennials and Gen-Z in Medan City

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ABSTRACT

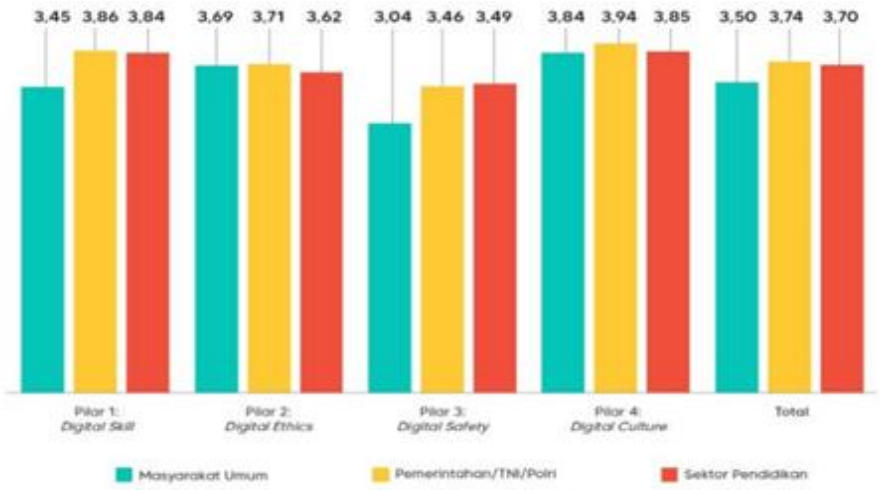
Digitalization is currently one of the development and operation of a device, platform, and media increasingly used by Millennials and Gen-Z to provide information or sell products. Product digitalization is not only in marketing but also as a promotional medium to create consumption patterns for application users who are highly dependent on lifestyle changes and perceptions of online shopping applications. In this study, quantitative methods are research based on the philosophy of positivism, used to research specific populations and samples. This study used 100 samples from the Medan Helvetia district using a cluster sampling method. The results of this study show that digital devices have a positive and significant influence on the perception of online shopping, platform digitalization does not have a positive and significant influence on the perception of online shopping, the media digitalization has a positive and insignificant influence on the perception of online shopping among millennials and gen-z in Medan City. Digitalization in online shopping applications has a huge impact on the perception of online shopping application users because the information obtained becomes faster and there is an increase in customer consumptive patterns

Introduction

The era of digitalization in the field of business and marketing is not something new to hear, because the use of digitalization is one of the choices that make startup companies develop and innovate all the features and services they have in an application. Digitalization devices are digital devices that have an important role in informing technological needs in the development of startup businesses in Indonesia. The development of digitalization of media and platforms is currently able to provide convenience in promoting and informing a product and service available on online shopping applications in Indonesia. Perceptions of online shopping are also one of the determining factors in increasing the trust of users of online shopping applications today.

Digital devices are hardware devices that use computers or microcontrollers, and they are found everywhere in our digitalized world. These devices enhance and support the way we live our lives every day. They can connect and work together to give us the data we need, when and where we need it. Digital devices are always evolving. This is changing the way they are used by individuals, organizations, and local, national, and community communities (Bell, n.d.)

Very fast information can be obtained from the development of digitalization technology which has been widely used by companies to get attention and increase the number of customers or buyers either through information media such as advertisements, websites, social media, and television. Public perception in providing assessments can be seen from the community's ability to understand and use online shopping applications to purchase or sell products. The presence of digitalization can provide additional community expertise in using online shopping applications to meet the needs of daily life, business development, government systems, and in learning activities at schools or universities. The digital literacy assessment index is based on the ability to use digital devices owned so that it has an impact on digital ethics, digital society, and digital culture. This can also be seen from the development of digitalisation literacy in several sectors as shown in Figure 1 below:



Source: https://survei.literasidigital.id

Figure 1.
Comparison of Digital Literacy index by Society segmentation

In Figure 1 above, it can be seen that digital literacy in 2022 in the general public sector has decreased as well as in the government sector and the education sector. This shows that it is necessary to increase public perception of digitalisation both in the use of devices, media and platforms used in interacting both in the community or in purchasing products and selling products in online shopping applications. Digitalisation of devices, digitalisation of media and digitalisation of platforms can be used as a solution to problems that often occur in using online-based applications. Digitalisation of devices is currently still less effectively used by online shop companies in developing service systems and product purchase transactions due to a lack of public understanding to use digital services as an alternative in solving problems that often occur in the use of digital devices. This phenomenon is the basis for the assessment of the use of digital devices and services in Indonesia as shown in Table 1 below:

Table 1.
Overview of Adoption and Usage of Connected Devices and Services

INDONESIA

OVERVIEW OF THE ADOPTION AND USE OF THE CONNECTED DEVICES AND SERVICES

OVERVIEW	2011	JAN 2022	CHANGE (Δ)
TOTAL POPULATION	237,6 Million	277,7 Million	40,1 Million ~ (16,9%)
MOBILE CONNECTION	210,4 Million	370,1 Million	159,7 Million ~ (75,9%)
INTERNET USERS	39,6 Million	204,7 Million	165,1 Million ~ (416,9%)
ACTIVE SOCIAL MEDIA USERS	40,8 Million	191,4 Million	150,6 Million ~ (369,1%)

Sumber : https://datareportal.com/

In Table 1, it can be seen that changes in the use of digitalised media starting from 2011 as many as 40.8 million users in 2022 experienced a significant increase of 191.4 million users or 369.1%. This makes media digitalisation one of the most widely used applications, especially in online shopping applications. Another problem that supports the above problem is the use of the internet which has increased by 416.9% in 2022. This increase occurred due to the high public need for the use of the internet as a medium of information and communication. The current problem is that the increase in the number of Internet users is not followed by an increase in the number of users of online shopping applications. The purchase of products in online shopping applications increases when certain programmes are implemented, while when no programmes are

implemented, online shopping applications only offer discounts. This is the problem in this study that digital devices are one of the digital devices that have advantages and disadvantages in both use and application. The increase in Internet users will be followed by digital media users, because application users use digital media as one of the needs to complement current lifestyles and trends.

New media exists from various old media inventions that are no longer relevant to using technological developments today. Old media such as television, films, magazines, and books do not simply disappear, but rather process and follow the circumstances in the form of new media. In this era, the internet network makes it very easy for people to access new forms of communication media. New media covers many aspects. First, it becomes entertainment, pleasure, and media consumption patterns. Second, new media is a new way of representing the global into a virtual society. Third, it is a new form of correlation between users and media technology. Fourth, is a new experience derived from a new image of a person, characteristics and community. Fifth, is the conception of the biological correlation of the body with media technology and finally, includes media culture, industry, economy, access, ownership, control, and regulation (Lister et al., 2006)

In addition, media digitalisation will also have an impact on changes in service systems related to the delivery of information that will be provided to users of online shopping applications. The concept of media digitalisation needs to be applied to online-based companies to gain the trust of customers and users of online shopping applications in Indonesia (Jonathan Sibarani, 2021). A business platform refers to a framework comprising both hardware and software components, serving as a central hub that organizes resources, transactions, and relationships within an ecosystem. This platform operates with network effects, bringing together various entities such as consumers, professionals, businesses, institutions, and partners to collaboratively generate value. One distinctive feature is that assets and value creation extend beyond the organization, arising from the ability to coordinate interactions among ecosystem participants. The orchestration involved demands innovative leadership styles, storytelling approaches, disruptive business strategies, and service logics. Continuous engagement with consumers is facilitated through pervasive devices, as highlighted in the Harvard Business Review (2016).

Aligned with these research directions, the current investigation aims to gain a comprehensive understanding, relying on primary data, to ascertain whether the alterations in business model dimensions brought about by digital transformation, as emphasized in the examined literature, are substantiated by real businesses, particularly innovative startups. The significance of digital platforms in shaping new business models has become increasingly apparent. The widespread adoption of digital technology has underscored the pivotal role of a platform as a key element in innovation processes, making it a central focal point for innovation endeavors among many firms (Yoo et al., 2012). Various definitions of a digital platform exist in the literature. For instance, Sedera et al. (2016) characterize a digital platform as "a technology architecture that enables the development of its own computing functionalities and facilitates the integration of information, computing, and connectivity technology platforms available to an organization" (Sedera et al., 2016; p.367)

Digital platform is a group of computer-based technologies that can replace the role and human power manually into a computerised or computer-readable format. Digital platforms can be applied to re-design the appearance of the application so that the product has an appeal to application visitors. This is the basis for the assessment of application users to choose an application that has a choice of features and an attractive appearance. In addition, the lack of a digital platform in online shopping applications is generally based only on the function of using the platform as an online media that is used only on social media and other information media. The phenomenon that often occurs is that online shopping application users do not understand the function of using existing online media, because most application users only make digital platforms as a medium for communicating with other users without considering the advantages of the platform in running businesses and businesses that require online media to promote and make sales.

Application users' perception of digital services is an understanding followed by an action to make a purchase. This makes application users very selective in their choice of digital platforms in online shopping applications. In addition, the use of digital devices will have an impact on the speed of access to services in online shopping applications. The development of digital services today has brought new changes to the system and operationalisation of selling a product. Digital media is an alternative choice most often used by application users to make sales and reach more buyers through digital media used such as Facebook, Twitter, WhatsApp, YouTube and Instagram. The presence of digital media means that many application users today have not just one application, but more than one application that can be used to create product content or make live sales.

Literature Review

Table 2. Definition, Operational Indicators of Research Variables

Variable	Definition	Indicator	Scale
Digitalisation of Devices (X_1)	Customers as digital customers use digital devices to conduct transactions with companies selling goods and services as digital enterprises Source: Don Tapscott dalam Hadion (2020)	1. Physical operation of digital devices 2. Identifying software to operate digital devices, exploring 3. Searching, and filtering digital data information 4. Evaluate digital data information 5. Manage digital information and content Source : Sumiaty & Sumiaty (2014)	*Likert*
Digitalisation of Platform (X2)	Digital platform as a set of digital resources, either services or content, that facilitates interaction between its participants Source : Constantinides. et.al (2018)	1. Build a technology-enabled network 2. Perform matching and on-demand services 3. Bypassing intermediaries and trade barriers 4. Facilitating payment and distribution 5. Ranking and analysing services or products Source : Asian Development Bank (ADB, 2021)	*Likert*
Digitalisation of Media (X3)	Digital media is media whose content is a combination of data, text, sound, and various types of images stored in digital format and disseminated through broadband optical cable-based networks, satellites and microwave systems. Sumber: Flew (2008:2)	1. Cultural, i.e. understanding the various contexts of users of the digital world 2. Cognitive, which is the thinking power in assessing content 3. Constructive, namely the design of something expert and actual 4. Communicative, which is understanding the performance of networking and communication in the digital world 5. Responsible self-confidence 6. Creative, doing new things in new ways 7. Critical in addressing content 8. Socially responsible Source : Bellshaw (2011:90)	*Likert*
Perception of Online Shopping (Y)	Students feel interested in shopping online through the Shopee application because of the promotions and assessments given by consumers, thus creating student perceptions that can sway consumers to make purchasing decisions in buying the desired product Source : Feranika (2020)	1. Easy to use 2. Easy to learn, clear and understable 3. Become skilful Source : Davis et al. 1989) in Khomalasari (2015)	*Likert*

Method

The research method used is a quantitative approach, while the data analysis used is the PLS SEM method with outer model and inner model analysis techniques. According to Husein (2015: 18), outer model analysis is carried out to ensure that the measurement used is feasible to be used as a measurement (valid and reliable), while inner model analysis is to test the relationship between latent constructs. Quantitative

methods are used in order to determine the effect of a treatment which is then tested the hypothesis. The research hypothesis for the use of research variables in this study can be seen in Figure 2. Conceptual framework below:

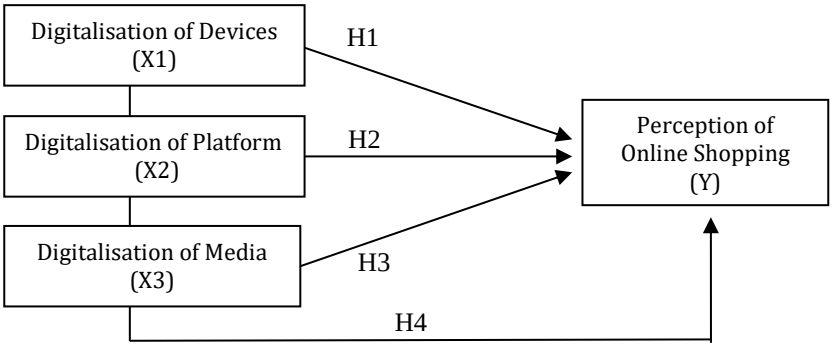


Figure 2. Conceptual Framework

H_1 : Digitalisation of devices has a positive and significant effect on perception of online shopping in Medan City.
H_2 : Digitalisation of platform has a positive and significant effect on perception of online shopping in Medan City.
H_3 : Digitalisation of media has a positive and significant effect on perception of online shopping in Medan City.
H_4 : Digitalisation of Devices, Digitalisation of Platform and Digitalisation of Media have a positive and significant effect on perception of online shopping in Medan City

Research Result

Measurement Model (Outer Model)
Reliability Test
A reliability test is implemented to validate the precision and consistency of an instrument in gauging constructs. In PLS-SEM through the SmartPLS 4.0 software, evaluating the reliability of a construct with reflexive indicators involves the computation of the composite reliability value. This value serves as a measure of the construct's reliability, indicating the degree to which its reflective indicators accurately capture the underlying latent construct. The requirement that is usually used to assess construct reliability is that composite reliability must be greater than 0.7 for confirmatory research and a value of 0.6 - 0.7 is still acceptable for exploratory research (Ghozali & Latan, 2015: 75). Reliability tests cannot be carried out on formative models because each indicator in a latent variable is assumed to be uncorrelated or independent (Andreas Wijaya, 2019: 100).

Table 3. Reliability Test Result

	Cronbach's Alpha	Composite reliability (rho_a)
(X1) Digitalisation of Devices	0.884	0.893
(X2) Digitalisation of Platform	0.926	0.930
(X3) Digitalisation of Media	0.938	0.949
(Y) Perception of Online Shopping	0.861	0.862

Source: Data Processed, 2023

In Table 3, the reliability of the variables is detailed. Specifically, the digitalization of devices exhibits a Cronbach's alpha of 0.884, and its composite reliability is 0.893, indicating its reliability. Similarly, the platform digitalization variable has a Cronbach's alpha of 0.926, and a composite reliability of 0.930, confirming its reliability. Furthermore, the media digitalization variable boasts a Cronbach's alpha of 0.938 and a composite reliability of 0.949, both pointing to its declared reliability.

Validity Test

Convergent Validity

According to Widyaningtyas, Syarah, et al (2016), the validity test is intended to measure the extent to which the accuracy and accuracy of a measuring instrument in performing its measuring instrument function or providing appropriate measurement results by calculating the correlation between each statement and the total score. In this study, the measurement validity test consists of convergent validity and discriminant validity.

Table 4 ***Loading Factor***

	Digitalisation of Devices (X1)	Digitalisation of Media (X3)	Digitalisation of Platform (X2)	Perception of Online Shopping (Y)
DD1	**0.704**			
DD10	**0.818**			
DD2	**0.798**			
DD5	**0.828**			
DD7	**0.714**			
DD8	**0.732**			
DD9	**0.776**			
DM1		**0.703**		
DM11		**0.756**		
DM13		**0.852**		
DM14		**0.759**		
DM15		**0.720**		
DM16		**0.715**		
DM3		**0.778**		
DM4		**0.769**		
DM5		**0.773**		
DM7		**0.772**		
DM8		**0.761**		
DP1			**0.838**	
DP10			**0.733**	
DP2			**0.789**	
DP3			**0.816**	
DP4			**0.813**	
DP5			**0.843**	
DP6			**0.814**	
DP7			**0.755**	
DP8			**0.790**	
DP9			**0.803**	
PBO1				**0.804**
PBO2				**0.818**
PBO3				**0.848**
PBO5				**0.779**
PBO6				**0.761**

Source: Data Processed, 2023

In Table 4, the loading factors are elucidated, specifically for the variables of personal selling, premium price, and income level. It is observed that all loading factors surpass a value of 0.7. This leads to the conclusion that all indicators fulfill the criteria for convergent validity, signifying that none of the indicators for these variables were excluded from the model.

Discriminant Validity

Discriminant validity is the extent to which a construct is truly different from other constructs according to empirical standards.

Table 5. Discriminant Validity

	Average variance extracted (AVE)
Digitalisation of Devices (X1)	0.591
Digitalisation of Media (X3)	0.576
Digitalisation of Platform (X2)	0.640
Perception of Online Shopping (Y)	0.644

Source: Data Processed, 2023

According to the information presented in Table 5, the Average Variance Extracted (AVE) values for the latent variables digitalisation of devices (0.591), digitalisation platform (0.640), digitalisation media (0.576), and perception of online shopping (0.640) all exceed 0.50. This indicates that the measurement model demonstrates valid discriminant validity, as the latent variables exhibit AVE values greater than the recommended threshold. Furthermore, the assessment of discriminant validity is also performed based on the Fornell-Larcker criterion, as outlined by Dandi Pratama, Novrian, et al (2018). According to this criterion, if the correlation between a latent construct and its indicators is higher than the correlation with other constructs, it implies that the latent construct can better predict the indicators compared to other constructs. Henseler, et al (2015) emphasize that the Fornell-Larcker criterion, a well-established method for over three decades, involves comparing the square root of the AVE for each construct with the correlations between that construct and other constructs in the model.

Table 6. Fornell Larcker Criterion

	Digitalisation of Devices (X1)	Digitalisation of Media (X3)	Digitalisation of Platform (X2)	Perception of Online Shopping (Y)
Digitalisation of Devices (X1)	0.768			
Digitalisation of Media (X3)	0.431	0.759		
Digitalisation of Platform (X2)	0.392	0.460	0.800	
Perception of Online Shopping (Y)	0.706	0.516	0.470	0.803

Source: Data Processed, 2023

In Table 6, the Fornell-Larcker criterion is elucidated, proceeding systematically with values for each variable: digitalisation of devices (0.768), digitalisation platform (0.800), digitalisation media (0.759), and perception of online shopping (0.803). The information from Table 6 indicates that each indicator within a latent construct exhibits the highest loading factor value compared to the loading factors with other latent constructs. This suggests that each statement indicator is effectively and accurately predicted by its corresponding latent construct. In essence, the results affirm the validity of discriminant validity for all constructs, meeting the prescribed criteria. Apart from using the AVE value, another method that can be used to determine discriminant validity is to measure discriminant validity by using the cross-loading value. According to Dandi Pratama, Novrian, et al (2018), an indicator is said to meet discriminant validity if the cross-loading value is 0.70 or more. cross-loadings are usually the first approach to assessing the discriminant validity of indicators. Specifically, the indicator's external loading on the related construct must be greater than all cross-loadings (i.e., its correlations) on other constructs.

Table 7. Cross Loading

	Digitalisation of Devices (X1)	Digitalisation of Media (X3)	Digitalisation of Platform (X2)	Perception of Online Shopping (Y)
DD1	**0.704**	0.188	0.275	0.418
DD10	**0.818**	0.333	0.321	0.652
DD2	**0.798**	0.279	0.237	0.523
DD5	**0.828**	0.379	0.243	0.572
DD7	**0.714**	0.453	0.361	0.568
DD8	**0.732**	0.363	0.291	0.411
DD9	**0.776**	0.298	0.368	0.581

DM1	0.344	**0.703**	0.319	0.406
DM11	0.260	**0.756**	0.266	0.333
DM13	0.313	**0.852**	0.426	0.406
DM14	0.318	**0.759**	0.334	0.380
DM15	0.301	**0.700**	0.369	0.326
DM16	0.284	**0.715**	0.350	0.386
DM3	0.376	**0.778**	0.358	0.451
DM4	0.440	**0.769**	0.316	0.359
DM5	0.284	**0.773**	0.287	0.352
DM7	0.372	**0.772**	0.404	0.486
DM8	0.272	**0.761**	0.382	0.362
DP1	0.294	0.317	**0.838**	0.330
DP10	0.216	0.336	**0.733**	0.258
DP2	0.360	0.452	**0.789**	0.466
DP3	0.362	0.489	**0.816**	0.475
DP4	0.357	0.220	**0.813**	0.359
DP5	0.229	0.258	**0.843**	0.295
DP6	0.306	0.283	**0.814**	0.337
DP7	0.280	0.369	**0.755**	0.348
DP8	0.401	0.545	**0.790**	0.466
DP9	0.195	0.212	**0.803**	0.254
PBO1	0.542	0.447	0.308	**0.804**
PBO2	0.547	0.517	0.374	**0.818**
PBO3	0.629	0.296	0.416	**0.848**
PBO5	0.550	0.392	0.400	**0.779**
PBO6	0.562	0.422	0.387	**0.761**

Source: Data Processed, 2023

Cross-loading, i.e. the correlation coefficient of the indicator with its association construct (cross-loading) compared with the correlation coefficient with other constructs (cross-loading). The value of the indicator's correlation construct must be greater for its association construct than for other constructs. This higher value indicates that an indicator is better at explaining its association construct than at explaining other constructs. (Jorg Henseler et al., 2014)

In Table 7 presents the outcomes of cross-loading estimations, indicating that each indicator within a latent variable exhibits a cross-loading value higher than those in other latent variables, surpassing a threshold of 0.7. This signifies that each latent variable demonstrates robust discriminant validity, with some latent variables having measurements closely correlated with other constructs. If the measurement model is established as valid and reliable, the subsequent step involves assessing the structural model. Conversely, if issues persist, a reconstruction of the path diagram becomes necessary.

Structural Model Test

According to Ghozali and Latan (2015: 78), structural model testing is done by looking at the relationship between constructs.

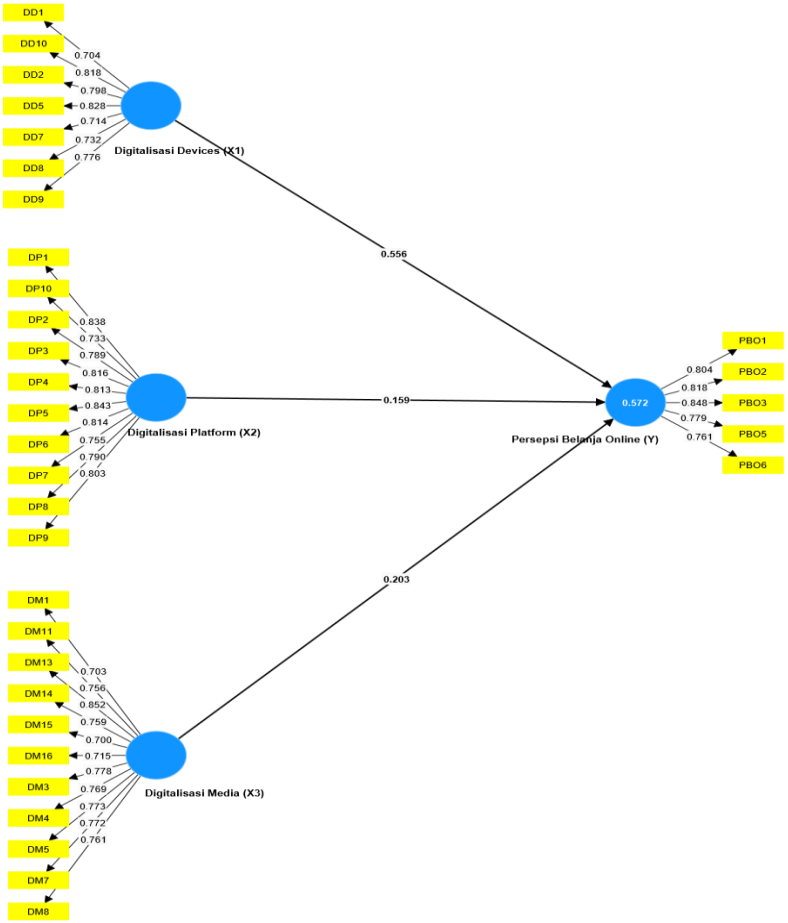


Figure 3 Structural Model
Source: Data Processed, 2023

R Square Value

R-square is a numerical value that falls within the 0 to 1 range, providing insight into the collective impact of independent variables on the dependent variable. The R-squared (R2) value serves as a metric for evaluating the extent to which a specific independent latent variable influences the dependent latent variable.

Table 8 *Adjusted R.Square*

	R-square	R-square adjusted
Perception of Online Shopping (Y)	0.572	0.562

Source: Data Processed, 2023

The construct value of the perception of online shopping on insurance obtained an Adjusted R.Square value of 0.562 which can be interpreted that the variation in the perception of online shopping variables can be explained by the variables of digitalisation of devices, digitalisation of platforms and digitalisation of media by 56.2%, while the remaining 43.8% is explained by other variables outside of the variables studied

Hypothesis Test

According to Pratiwi, Rizki (2017), once a research model is deemed suitable, the subsequent phase involves hypothesis testing. The study proceeds to examine the hypotheses formulated earlier. In this context, the sample undergoes the bootstrapping method, a technique employed to mitigate potential abnormalities in research data. The final stage of the test, utilizing the SmartPLS application, involves hypothesis testing by analyzing the results obtained from the bootstrapping procedure. To perform this test, the user selects the calculate menu, followed by the appearance of menu options. Subsequently, the bootstrapping option is

chosen, leading to the display of the relevant data. The ensuing sections present the outcomes of the data test conducted through bootstrapping.

Table 9. Hypothesis Test

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Digitalisation of Devices (X1) -> Perception of Online Shopping (Y)	0.556	0.549	0.080	6.951	0.000
Digitalisation of Media (X3) -> Perception of Online Shopping (Y)	0.203	0.191	0.097	2.089	0.037
Digitalisation of Platform (X2) -> Perception of Online Shopping (Y)	0.159	0.181	0.105	1.516	0.130

Source: Data Processed, 2023

Assegaff (2015), in this study there are 3 hypotheses to be developed. To test the hypothesis, 2 criteria are used, namely the path coefficient value and the t-statistic value. Natalia, Ria & Tarigan, Josua (2014), the criteria for the path coefficient value is that if the value is positive, then the effect of a variable on the variable it affects is unidirectional. If the path coefficient value is negative, then the effect of a variable on other variables is in the opposite direction. The research hypothesis can be accepted if the calculated t value (t-statistic)> t table at an error rate (α) of 10%, namely 1.66.

1. Digitalisation of Devices (H1)
   Digitalisation devices have a t-statistics value of 6,951> 1.66 and p values of 0.000, so digitalisation devices have a positive and significant influence on the perception of online shopping on millennials and gen-z in Medan City.
2. Digitalisation Platform (H2)
   The digitalisation platform has a t-statistics value of 1.516 < 1.66 and a p-value of 0.037, so the digitalisation platform does not have a positive and significant influence on the perception of online shopping on millennials and gen-z in Medan City.
3. Media Digitalisation (H3)
   In media digitalisation has a t-statistics value of 2.089> 1.66 and a p-value of 0.130, so media digitalisation has a positive and insignificant effect on the perception of online shopping among millennials and gen-z in Medan City.

Discussion

The Effect of Digitalisation Devices on Perceptions of Online Shopping in Medan City

The statistical t value of 6,951 > 1.66 and the p value is 0.000, so digitalisation devices have a positive and significant influence on the perception of online shopping for millennials and gen-z in Medan City. Where if digitalisation devices have increased, in this case the understanding of digital device users in making transactions to purchase products in online shopping applications. This proves that digital devices owned by consumers have an influence in providing a positive perception of online shopping because adequate digital devices can increase consumer purchasing power on products available in e-commerce application.

According to Don Tapscott in Hadion (2020), digitization is a process of transforming information from various forms into digit formats "0" and "1" (two-based numbers). That is, business transactions using digital technology and digital information. Customers as digital customers use digital devices to make transactions with companies selling goods and services as digital enterprises. This is also supported in research conducted by Daud & Hassan (2011) entitled The Effect of Perceptions of User Ease and Perceptions of Usefulness on Interest in Online Shopping at Alfamart. Based on the results of the study, it shows that perceived ease of use and perceived risk are positively related to online trust. In this study, it can be explained that when someone has positive feelings towards technology, there will be positive beliefs that are trusted by him, while risk is related to something negative. Perception of risk is related to negative experiences when using online shopping applications, it happens because after users try the online shopping application technology they get a bad experience using technology.

The use of digital devices has an impact not only on increasing the use of online shopping applications, but also on the perception of online shopping. Digital devices are the ability of application users to understand

the operation of devices and use them in online shopping applications. The ease of use of digital devices is one of the most important factors in ensuring that application users do not experience problems when accessing the services of online shopping applications. This underpins and reinforces the research findings that digital devices have a positive and significant impact on online shopping perceptions.

The Effect of Platform Digitalisation on Perceptions of Online Shopping in Medan City

The value of t-statistics 1.516 < 1.66 and the value of p values 0.037, then the digitalisation platform does not have a positive and significant influence on the perception of online shopping on millennials and gen-z in Medan City. The results of this study are also supported by research conducted by Pangestuti, Dwi Rizqi. et al (2023), which states that E-commerce can increase consumer consumption. With the existence of e-commerse, a person's shopping pattern has increased. Not only buying necessities but also less useful items. According to Nugraha, Salsabilla Annisa Aliyyah & Sugih Arijanto, in their research, the results of the significance test Ha (E-commerce → Consumption patterns) show that they accept H0, which means that the e-commerce variable has a significant effect on the consumption pattern variable, meaning that the more complete the information, the attractive interface, and the ease of the transaction process of an ecommerce will also be proportional to the increase in consumption patterns. The contribution calculation shown by the R2 value is 0.527 or 52.70%, which means it shows a moderate accuracy value where consumption patterns are influenced by 52.70%. Based on the results of this study, it can be concluded that the perception of online shopping is based on consumer consumptive patterns after using the digitalisation of the E-commerce platform because it has interesting information and services, especially in the large selection of products in the E-commerce application.

Based on the research results, it is found that the digital platform does not have a significant influence on the perception of online shopping. This is because application users already have more than one digital platform that is used to transact in online shopping applications, where each online shopping application has its own advantages and disadvantages, and this is not a problem for application users to use online shopping applications. In addition, the digital platform is not only a media platform, but also functions as an application with features and services that distinguish one online shopping application from another.

The Effect of Media Digitalisation on Perceptions of Online Shopping in Medan City

The t-statistics value is 2.089 > 1.66 and the p-value is 0.130, so media digitalisation has a positive but insignificant influence on the perception of online shopping among millennials and gen-z in Medan City. This means that the media digitalisation variable has a positive effect on the perception of online shopping in Medan City. Media digitalisation greatly influences the perception of online shopping because online media currently has an important role in changing the mindset of consumers in purchasing products in online shopping applications. Online media is currently able to provide interesting information and offers in making product purchases. In addition, the convenience obtained through the payment process for product purchases is also one way for E-commerce to get a lot of interest in online shopping application users in Medan City. According to Kaplan and Haenlein (2010), social media is a set of applications that depend on the internet network which was started by Web 2.0, this programme was invented by Tim O'rei1y Web 2.0 which is a simple platform before becoming social media, this platform provides ease of exchanging information for users and as a means of collaborating online. Social media such as Facebook, YouTube, Twitter, Instagram and others are now used as a medium to convey information quickly, precisely, and spread to many people. The use of digital media for business is not just an additional marketing activity, but also an integrated communication mechanism that amplifies the impact of every function within an organisation by harnessing the power of human networks through a platform (Blanchard 2015).

Based on the research results, it is found that digital media has a positive and insignificant influence on the perception of online shopping. The perception of online shopping for application users in the millennial generation and gen-z in Medan City has not been maximised to use the application as an alternative choice in transactions to buy and sell products in online shopping applications. Features of digital media services also attract application users to use their services because they can help create content related to product sales. In addition, digital media makes it easier for application users to obtain information and services related to the products to be purchased in online shopping applications. The development of digital media today is not accompanied by an increase in the perception of application users of the features and services available in online shopping applications. This problem is one of the reasons why the ability to use digital media is needed to determine the extent to which digital media can be implemented in the use of online shopping applications

The Effect of Digitalisation of Devices, Digitalisation of Platforms, and Digitalisation of Media on Perceptions of Online Shopping in Medan City

The construct value of the perception of online shopping in the millennial generation and gen-z obtained an Adjusted R.Square value of 0.562 which can be interpreted that the variation in the perception of online shopping variables can be explained by the variables of digitalisation of devices, digitalisation of platforms and digitalisation of media by 56.2%, while the remaining 43.8% is explained by other variables outside of the variables studied. Digitalisation of devices, apart from being the use of online-based marketing communication devices, is also one of the ways in the successful development of online businesses which are currently increasingly in demand, while platform digitalisation is an online-based marketing application that is able to reach more application users who make the E-commerce platform currently owned as one of the platforms that provides benefits both in the payment system and in promoting products and services. Media digitalisation is an alternative for online shopping application users to get the latest and updated information related to products and services that are currently viral or trending among millennials and gen-z. Based on this explanation, the perception of online shopping will have a positive and significant impact if the use of digitalised devices, digitalised platforms and digitalised media can be implemented properly. The results of the study are also supported by research from Sibarani, Hendra Jonathan (2021), which states that the development of digitalisation services is an opportunity for marketplace application providers to be able to increase content creativity and product marketing that not only uses marketplace applications but also uses social media in providing information and education about product descriptions to consumers.

The effect of digital devices, digital platforms and digital media on the perception of online shopping on the results of research and observations that have been made can be explained that digitalisation of services is currently one of the innovations made by e-commerce companies to get more application users. This proves that technological development is no longer an obstacle for application users who are unable to run digital devices or use digital media and platforms

Conclusion

This research is limited only to application users who use digital devices, digital platforms and digital media. The research sample is limited only to users of online shopping applications who use digital services in transactions or make sales and purchases in currently owned applications. The results obtained for the device digitalisation variable have a positive and significant effect on the perception of online shopping, the platform digitalisation variable has no positive and significant effect on the perception of online shopping, the media digitalisation variable has a positive and insignificant effect on the perception of online shopping, while the device digitalisation, platform digitalisation and media digitalisation variables simultaneously have a positive and significant effect on the perception of online shopping among millennials and Gen-Z in Medan City. E-commerce companies in Indonesia should have an important role in improving application systems related to devices, application platforms and information media used so that the perception of online shopping application users can have a positive experience when using online shopping applications. For future researchers, it is recommended that they conduct and develop this research with other variables that can influence the perception of online shopping because there are still other factors that influence the perception of online shopping in the Millennial Generation and Gen-Z in Medan City

References

ADB. (2021). ***Basic 2021 Statistics: Statistics and Data Innovation Unit***. Manila: Asian Development Bank.

Ananda Sabil Husain (2015), ***Penelitian bisnis dan manajemen menggunakan partial least squares (PLS) dengan smart PLS 3.0***. Modul ajar jurusan manajemen fakultas ekonomi dan bisnis unversitas Brawijaya

Andres Kaplan & Michael Haenlein, 2010. ***User Of The World, Unite! The Challenges and Opportunities Of Social Media***, Business Horizons

Assegaff Setiawan, 2015, ***Pengaruh Trust (Kepercayaan) dan Online Shopping Experiences (Pengalaman Berbelanja Online) terhadap Perilaku Konsumen dalam Berbelanja Online: Prespektif Konsumen di Indonesia***, Vol 13 No. 3 September 2015

Blanchard, Olivier. (2015). ***Social Media ROI: Mengelola dan Mengukur Penggunaan Media Sosial pada Organisasi Anda***. (S. Kurniali & L.Natalia). Jakarta: Elex Media Komputindo

Belshaw, Douglas A.J. 2011. ***What is Digital Literacy? A Pragmatic Investigation***. Thesis. Durham University. pp 1-274

Brown, T. (2008). ***Design Thinking***. Harward Business Review

Constantinides, E. (2008). ***Web 2.0: Conceptual foundations and marketing issues***. Journal of Direct, Data and Digital Marketing Practice, 9(3), 231–244

Feranika, Vega. 2020. ***Persepsi Mahasiswa Dalam Berbelanja Online Melalui Marketplace Shopee (Studi Kasus Mahasiswa Manajemen Bisnis Syariah Fakultas Ekonomi Bisnis Islam di IAIN Kudus Angkatan 2016)***. Skripsi. IAIN Kudus.

Flew, T. (2008). ***New Media : an introduction***. New York : Oxford University Pers

Hadion Wijoyo, dkk. (2020). ***Digital Economy dan Pemasaran Era New Normal***, Sumatra Barat

Hendra Jonathan Sibarani (2021). ***Digital Marketing Implementation on Development and Prospective Digital Business (Case Study on Marketplace in Indonesia)***. Malaysian E Commerce Journal, 5(2): 64-68

Ghozali, Imam, Hengky Latan. 2015. ***Konsep, Teknik, Aplikasi Menggunakan Smart PLS 3.0 Untuk Penelitian Empiris***. BP Undip. Semarang

Khomalasari, Devi Ida. 2015. ***Pengaruh Persepsi Manfaat, Persepsi Kemudahan Penggunaan Terhadap Layanan Mobile Banking Melalui Sikap Sebagai Intervening (Studi Kasus Nasabah Bank BCA Di Wilayah Kecamatan Palmerah, Jakarta Barat)***. Skripsi. Jakarta: Universitas Esa Unggul

Kolko, J. (2015). ***Design thinking comes of age***. harvard business review

Ling, K. C., bin Daud, D., Piew, T. H., Keoy, K. H., & Hassan, P. (2011). ***Perceived risk, perceived technology, online trust for the online purchase intention in Malaysia***. International. Journal of Business and Management, 6(6), p 167-182.

Lin, Y. H., Chang, L. R., Lee, Y. H., Tseng, H. W., Kuo, T., & Chen, S. H. (2014). ***Development and Validation of the Smartphone Addiction Inventory (SPAI)***. PLoS One, 9 (6), e98312

Lister, M., et al. 2009. ***New Media: A Critical Introduction Second Edition***. New York: Routledge

Sumiati. (2014). ***Pengaruh Motivasi Konsumen, Persepsi Kualitas, Sikap Konsumen, dan Brand Image Pada Keputusan Pembelian Komputer Tablet Apple Ipad Pada Emax Apple Store Surabaya***. Jurnal Ilmu Ekonomi & Manajemen, 1(2), 110–123.

Syarah Widyaningtyas, et al., "***Pengaruh Marketing Mix terhadap Kepuasan dan Loyalitas Konsumen menggunakan Metode Structural Equation Modelling (SEM) (Studi Kasus Toserba Toko Tembalang "Totem")***", Jurnal Gaussian, Vol. 5 No. 3, Universitas Diponegoro, 2016, hal. 561