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The purpose of this study was to determine the effect of augmented reality digital innovation product on decisions by intervening brand image. The samples taken were 100 Soegijapranata Semarang Unika students class of 2021. The analysis technique used was path analysis. The results of the study show: 1) there is a positive effect of augmented reality digital innovation product on brand image, 2) there is a positive effect of augmented reality product innovation on decisions, 3) there is a positive effect of brand image on decisions, 4) augmented reality digital innovation product has an effect on decisions with brand image as intervening variable.

Keywords— Augmented Reality, Brand Image, Digital Products, Decisions

I. INTRODUCTION

The Covid-19 pandemic has had a significant impact on all sectors, including education. This is driven by government policies (Government Regulation Number 21 of 2020 concerning Large-Scale Social Restrictions in the Acceleration of Covid-19 Handling. The regulation was signed by President Joko Widodo on Tuesday, March 31, 2020) that enforce physical distancing, leading to operational challenges for schools and universities in Indonesia. Almost all higher education institutions implemented workfrom-home arrangements, causing disruptions in both academic and non-academic activities, including new student admissions. According to Prof. Dr. Ir. Raihan Rasjidi, M.Si, the Rector of Universitas Islam Jakarta (UID), as stated during the National APTISI Webinar on Monday, October 5, 2020, nearly half of private universities in Indonesia experienced a decline in new student enrollments by more (Luthfi, 2020). Universitas 50% Muhammadiyah Sukabumi also faced a decrease in new student admissions during the pandemic, reaching around 14.5% from the previous year (Cahyadi, 2021). To cope with the Covid-19 pandemic, several promotional strategies were implemented by Universitas Muhammadiyah, including advertisements through pamphlets, videos, and infographics for new student admissions. Universitas Pancasila reported a decrease of 114 new students as of April 14, 2020, out of a total of 844 applicants. To address the situation, Universitas Pancasila employed various strategies such as increasing the frequency of online entrance exams, promoting the campus accreditation rank, organizing open house events for faculties, and adjusting the payment deadlines to be more affordable. These strategies were seen to utilize digital technology/information technology (IT) by the Public Relations, Promotion, and New Student Admissions Technical Unit of Universitas Muhammadiyah Sukabumi. According to Hasugian (2018), the diverse and rapid development of information technology in the current era of globalization has a significant impact on various aspects of life. Information technology has proven to be an effective supporting factor during the pandemic

Unika Soegijapranata Semarang is one of the universities that has experienced a

decrease in new student registrations. Based on the Higher Education Database (PDDikti) managed by the Ministry of Education, Culture, Research, and Technology, there has been a decline in the number of students by up to 14% at Unika Soegijapranata. Due to the pandemic, Unika Soegijapranata has shifted activities related to new admissions, entrance exams, acceptance, document submissions, and payments online through the official new student admission website (PMB) at pmb.unika.ac.id to facilitate prospective students' registration. Not only registration, but other activities promotions are also conducted online by Unika Soegijapranata to sustain during this pandemic. They maximize the use of social media platforms (WhatsApp, Instagram, Youtube, Facebook, Twitter, Line, Tiktok, created early after the pandemic emerged) to share various engaging contents in the form of videos and photos regularly posted on those social media platforms.

Kotler et al. (2017: 122) explained that social media has played a significant role in transforming the world of marketing. The shared contents are diverse, designed to capture the attention of the wider public. There is no other medium more efficient for global marketing than this (Turban, King, Lee, Liang, & Turban, 2012:650). The contents shared on social media also contribute to enhancing Unika Soegijapranata's brand image. Taan et al. (2021) explained that the proper use of social media can greatly influence a company's brand image through content creation, connecting, sharing, and building communities. Marketing contents can come in various forms such as images, videos, audio, written materials, and others (Yusuf et al., 2020). Contents can also be categorized based on their nature, whether they are entertaining, educational, emotional, etc. (Yusuf et al., 2020). Attractive and informative contents can attract the interest of students and their parents/guardians in their decision-making process to study at Unika Soegijapranata. As demonstrated by Yusuf et al. (2020), the results of the test showed an R-square of 0.281, indicating that marketing contents influence purchase decisions by 28.1%, while the remaining 71.9% is influenced by other variables not covered in this study. Thus, in this context, content plays an important role in the student decision-making process, therefore the content that must be shared is attractive and aligned with the campus brand image.

Unika Soegijapranata is one of the private higher education institutions in Indonesia that actively utilizes various digital technologies in teaching and learning activities, library services, course information dissemination, marketing, and more. Unika Soegijapranata demonstrates its tech-savvy approach with a range of digital technology products, as well as continuous innovation and development of these products, aimed at providing convenient services for the university community. As of 2020, Unika Soegijapranata has introduced more than 13 digital innovation products. The university's brand image, which embraces technology as a tool for teaching and services, proves crucial during the Covid-19 pandemic, where learning and various campus services are conducted online. This necessitates adequate digital technology and products, as well as the proficiency of faculty and staff in utilizing technology. Among the digital showcased again during products pandemic is the Augmented Reality digital innovation product.



Figure 1 Augmented Reality at Unika Soegijapranata's Online Graduation Source: Official YouTube of Unika Soegijapranata

During the Covid-19 pandemic, Unika Soegijapranata introduced and utilized Augmented Reality (AR) in their graduation

ceremony held on December 19, 2020. Unika Soegijapranata employed augmented reality as a digital product to create a unique and distinct impression during the graduation event. By combining augmented reality technology with Face Tracking Animation in the 2020 graduation ceremony, Unika Soegijapranata received recognition from the World Indonesian Achievement Institution (Leprid). According to Leprid's Chairman and Founder, Paulus Pangka, the recordgraduation procession breaking augmented reality and Face Tracking Animation was the first-ever in any other Higher Education Institution (HEI), making it the only one in Indonesia (INews Jateng.id, Ahmad Antoni • Thursday, December 17, 2020 - 21:36:00 WIB).

Given the numerous accolades received for this Augmented Reality digital product, Unika Soegijapranata didn't miss the opportunity to leverage it in their digital marketing activities to attract new students. As a novel and captivating innovation, Augmented Reality was also utilized in online presentations during the 2021 student admissions period at various high schools and in webinars organized by the marketing team of Unika Soegijapranata.



Figure 2.
Characters Vanika and Dimas as
Augmented Reality
Source: Primary Data of Unika
Soegijapranata's New Student
Admissions

As shown in the example in Figure 2 above, the moderator invites webinar participants (prospective students, parents, teachers, and the general public) to play an object search game that was previously informed during the promotional activities related to Unika Soegijapranata. The objects

in the game could be one of the university's strengths, logo, or key points that need to be prospective remembered students/webinar participants. This game serves as a means to convey information or achievements for the speakers providing information about Unika Soegijapranata, while also demonstrating the ease and innovative use of Augmented Reality (AR) digital products implemented by Unika Soegijapranata. In this context, Unika Soegijapranata aims to build an innovative and modern brand image. According to Sitio et al. (2017), a brand image is defined as the consumer's perception of a brand. For users, it is based on practical experiences with the product or service (impressions) and to what extent consumer expectations are met, while for non-users, the brand image is mostly based on unknown impressions, attitudes, beliefs. this case, and In Soegijapranata seeks to provide memorable experiences using this digital technology and convey information, hoping to establish a positive brand image.

In a study conducted by Ridwan Sanjaya & Albertus Dwiyoga Widiantoro (2009) titled "Utilizing Augmented Reality in Digital Marketing," 327 respondents were surveyed using a questionnaire distributed through Google Form. The study yielded positive results, indicating that Augmented Reality can serve as a helpful tool in finding the necessary information within the campus. This finding can be considered a strategic approach in utilizing Augmented Reality for digital marketing.

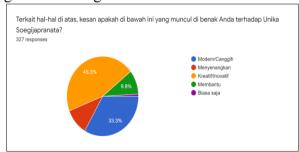


Figure 3.

The overall impression of AR content for various campus activities. Source: Internal research journal on the Utilization of Augmented Reality in Digital Marketing at

Unika Soegijapranata (Sanjaya R & Widiantoro A, 2021)

The results showed that 45% of the 327 respondents chose Unika Soegijapranata's AR product as one that provides creative/innovative impression, while 33.3% perceived Augmented Reality modern/sophisticated digital product. Unika Soegijapranata's use of Augmented Reality in various media has received appreciation and positive reception. The respondents' interest in digital marketing innovations can serve as an asset for larger purposes (Sanjaya R & Widiantoro A, 2021). Kotler and Keller (2016) conveyed that products offering the best quality,

performance, or innovative features. Some "product companies employ the development" strategy to sustain their business, focusing on product development and innovation. Such product innovations enable companies to enter broader markets, improve products, and influence purchasing attitudes (M. Ali, 2013). M. Ali also stated that companies that fail to innovate their products run the risk of losing consumers as competitors will take advantage of this situation.

The purpose of this research is to determine the influence of digital innovation products, specifically augmented reality, on decisionmaking through the mediating variable of brand image.

II. METHOD

Research Type

This study employs quantitative research, which reveals findings in the form of numerical data.

Research Subjects

The subjects of this research are 100 students of Unika Soegijapranata Semarang from the 2021 batch.

Research Procedure

This research uses the questionnaire technique, which involves obtaining data through the administration of questions to respondents for them to answer.

III. RESULTS AND DISCUSSION

Regression Results

1. Multiple Regression Analysis Results of Augmented Reality Digital Innovation Product on Brand Image

The results of multiple regression analysis between augmented reality digital innovation product and brand image can be seen in the following table:

Table 1 Multiple Regression Results Digital Augmented Reality Innovation Product on Brand Image

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		В	Std. Error	Beta		
	(Constant)	,997	,870		1,146	,255
1	Produk Inovasi Digital Augmented Reality	,943	,044	,907	21,324	,000

a. Dependent Variable: Brand Image Source: Processed Primary Data, 2023

Based on the regression results, a linear equation can be formulated as follows:

Y1 = 0.907 X1

The regression equation can be interpreted as follows:

The coefficient of the augmented reality digital innovation product (b1) = 0.907. The positive value obtained indicates that with every increase in the augmented reality digital innovation product, the brand image will also increase.

2. Multiple Regression Analysis Results of Digital Augmented Reality Innovation Product and Brand Image on Students' Decision-Making

The results of multiple regression analysis of the digital augmented reality innovation product and brand image on students' decision-making can be seen in the following table:

Table 2 Multiple Regression Results Digital Augmented Reality Innovation Product and Brand Image on Students'

Decision-Making

, E					
Model	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	В	Std. Error	Beta		
(Constant)	,720	,685		1,051	,296
1 Produk Inovasi Digital Augmented Reality	,275	,082	,269	3,348	,001
Citra Merek	,679	,079	,691	8,594	,000

a. Dependent Variable: Students' Decision Making

Source: Processed Primary Data, 2023

Based on the regression results, a linear equation can be formulated as follows:

Y2 = 0.269X1 + 0.691X2

The regression equation can be interpreted as follows:

- a. Regression coefficient of digital augmented reality innovation product (b1) = 0.269. The positive value indicates that an increase in the digital augmented reality innovation product will enhance students' decision-making.
- b. Regression coefficient of brand image (b2) = 0.691. The positive value indicates that an increase in the brand image will enhance students' decision-making.

t-Test Results

1. t-Test Results of Digital Augmented Reality Innovation Product on Brand Image The t-test results of the digital augmented reality innovation product on brand image can be seen in the following table:

Table 3 t-Test Results Digital Augmented Reality Innovation Product on Brand Image

Model		t	Sig.		
L					
	(Constant)	1,146	,255		
1	Produk Inovasi Digital Augmented Reality	21,324	,000		

a. Dependent Variable: Brand Image

Source: Processed Primary Data, 2023

Based on the t-test results, the following testing can be conducted:

The determination of the t-table value is df = n - k - 1 yaitu 100 - 1 - 1 = 98, and at a significance level of 0.05, the two-tailed t-table value is 1.984.

The t-test result for the digital augmented reality innovation product on brand image yields t-value = 21.324 > t-table = 1.984

with sig. 0.000 < 0.05, indicating that we accept the hypothesis stating that there is a positive influence of Digital Augmented Reality Innovation Product on Brand Image of Unika Soegijapranata.

T-test Results of Digital Augmented Reality Innovation Product and Brand Image on Student Decision

The t-test results of digital augmented reality innovation product and brand image on student decision can be seen in the following table:

Table 4 T-test Results of Digital Augmented Reality Innovation Product and Brand Image on Student Decision

Model		t	Sig.	
	(Constant)	1,051	,296	
1	Produk Inovasi Digital Augmented Reality	3,348	,001	
	Citra Merek	8,594	,000	

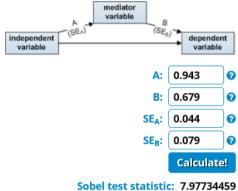
a. Dependent Variable: Student Decision

Source: Processed Primary Data, 2023 Determination of the t-table is as follows: df = n - k - 1 = 100 - 2 - 1 = 97 and at a significance level of 0.05, the two-tailed t-table value is 1.985.

- a. The t-test result for the product of digital augmented reality innovation on student decisions yields a t-value of 3.348 > t-table value of 1.985 with a significance level of 0.001 < 0.05, thus accepting the hypothesis stating a positive influence of Augmented Reality Innovation Product on the decision to become a student at Unika Soegijapranata.
- b. The t-test result for brand image on student decisions yields a t-value of 8.594 > t-table value of 1.985 with a significance level of 0.000 < 0.05, thus accepting the hypothesis stating a positive influence of Brand Image on the decision to become a student at Unika Soegijapranata.

Sobel Test

The intervening test was conducted using the Sobel test through online media, with the condition that if the Z value ≥ 1.98 and sig. ≤ 0.05 , then the intervening effect is proven. The results of the Sobel test for the product of digital augmented reality innovation on student decisions with brand image as the intervening variable can be seen in the following figure.



One-tailed probability: 0.0
Two-tailed probability: 0.0

Figure 4. Sobel Test of Digital Augmented Reality Innovation on Student Decisions with Brand Image as the Mediating Variable

Source: Processed Primary Data, 2023

The results of the Sobel test show that the Sobel test statistic (Z) is 7.977, which is greater than 1.98, and the two-tailed probability is 0.0, which is less than 0.05, thus proving the hypothesis that there is a positive influence of digital Augmented Reality innovation on the decision to become a student at Unika Soegijapranata with brand image as the mediating variable.

Managerial Implications

Based on the research results obtained, it is evident that Unika Soegijapranata's digital Augmented Reality innovation has an influence on students' decisions to choose the university through brand image as the mediating variable. This is because digital Augmented Reality innovation is one of the innovations that utilize information technology to provide different and more modern educational services, such as online graduation ceremonies, webinars, and the

availability of an Augmented Reality Library (AR Library) that allows students to get a summary of book contents without having to open and read the entire book. By simply selecting the book and scanning it using a mobile device, the content or summary of the book is projected in an audio and visual format on the mobile device screen. This condition will undoubtedly build a positive brand image for Unika Soegijapranata as a modern university that utilizes information technology to provide educational services. This is in line with the theory that states that Augmented Reality has the potential to create a new shopping experience on mobile devices and establish a more meaningful consumerbrand relationship (Scholz and Katherine 2018).

With an improved brand image resulting from the use of Augmented Reality as an educational service, this condition can contribute to the marketing of products or services. Consumers will base their decisionmaking on positive perceptions of the brand image of a product or service. Perceptions of this brand image are based on experiences using the product or positive information from others who have used the product. Just prospective students Soegijapranata, the availability of Augmented Reality provides ease of access to registration information and the registration process can be done online. Likewise, for students undergoing currently their studies. Augmented Reality supports the academic process by allowing access to course materials and academic activities online, making it practical and modern. This provides a positive experience for students at Unika Soegijapranata. These factors further support students' decisions choose Unika to Soegijapranata for their studies.

IV. CONCLUSION

- 1. The multiple regression analysis results show that for digital Augmented Reality innovation on brand image, the coefficient value is positive at 0.907, and the calculated t-value is 21.324, which is greater than the t-table value of 1.984, with a significance level of 0.000, which is less than 0.05. Thus, the hypothesis stating that there is a positive influence of digital Augmented Reality innovation on the brand image of Unika Soegijapranata is accepted.
- 2. The multiple regression analysis results show that for digital Augmented Reality innovation on students' decisions, the coefficient value is positive at 0.269, and the calculated t-value is 3.348, which is greater than the t-table value of 1.985, with a significance level of 0.001, which is less than 0.05. Thus, the hypothesis stating that there is a positive influence of digital Augmented Reality innovation on students' decisions to become students at Unika Soegijapranata is accepted.
- 3. The multiple regression analysis results show that for brand image on students' decisions, the coefficient value is positive at 0.691, and the calculated t-value is 8.594, which is greater than the t-table value of 1.985, with a significance level of 0.000, which is less than 0.05. Thus, the hypothesis stating that there is a positive influence of brand image on students' decisions to become students at Unika Soegijapranata is accepted.
- 4. The Sobel test results show that digital Augmented Reality innovation has an influence on students' decisions with brand image as the mediating variable, with a Sobel test statistic (Z) value of 7.977, which is greater than 1.98, and a two-tailed probability value of 0.0, which is less than 0.05. This indicates that with the presence of digital Augmented Reality innovation. the education services become more modern based on information technology, which will enhance the quality of education services

and encourage students to be more proficient in information technology. This will strengthen Unika Soegijapranata's image as a leading university in utilizing information technology, surpassing other universities. With a positive brand image, students' decisions to choose Unika Soegijapranata for their education will be enhanced, as a good brand image serves as a basis for choosing products or services.

V. RECOMMENDATIONS

- 1. For the variable of digital Augmented Reality innovation, attention should be given to the indicator with the lowest value, which is ease of use. Therefore, the digital Augmented Reality innovation used should be supported by user-friendly features, with simplified steps to access and apply digital Augmented Reality services, as well as providing more diverse settings to improve the quality of images or videos.
- For the brand image variable, it shows that 2. the competency output indicator receives the lowest rating. Unika Soegijapranata should equip its students with competencies for their future careers. Competency development provided through training in hard skills and soft skills, such as language proficiency, IT skills, communication abilities, and workshops to enhance skills and expertise related to the students' fields of study.

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