

## Uncovering the Influence of Marketing Strategies on Menstrual Health Management During Covid-19 in Indonesia

*Widjojo, Rosita<sup>1</sup> – Manurung, Siska Purnama<sup>2</sup> –  
Aslamiah, Ayu Hidayah<sup>3</sup> – Jolie, Angelica<sup>4</sup>*

---

**Abstract:** The study examines the influence of marketing strategies on menstrual health management (MHM) among Indonesian women during the Covid-19 pandemic. The research used a mixed-method approach, including quantitative surveys and qualitative focus group discussions. Using a sample size of 1,516 respondents, the quantitative findings indicate that marketing strategies did not affect the use of disposable sanitary pads or MHM preferences before the pandemic. However, after Covid-19, marketing strategies of disposable sanitary products had a significant impact on MHM preferences. Qualitative findings revealed that product, price, and promotion are important aspects of marketing strategies that influence MHM during the pandemic. Due to increased time spent at home and internet usage, women have greater access to information about MHM. The study also found a rising awareness of reusable menstrual products, hygiene, and environmental concerns. Thus, the study recommends that menstrual product brands focus on product innovation and social media promotional

- 
- <sup>1</sup> Rosita WIDJOJO Lecturer\*  
(<https://orcid.org/0000-0002-8073-683X>)  
Binus Business School Bina Nusantara University, Indonesia  
(rosita.widjojo@binus.ac.id)
- <sup>2</sup> Siska Purnama MANURUNG Lecturer  
(<https://orcid.org/0000-0003-2905-0485>)  
Faculty of Business President University, Indonesia  
(siskapurnama@president.ac.id)
- <sup>3</sup> Ayu Hidayah ASLAMIAH Lecturer  
(<https://orcid.org/0000-0001-7474-1846>)  
Faculty of Computer Science, Bina Nusantara University, Indonesia  
(aaslamiah@binus.edu)
- <sup>4</sup> Angelica JOLIE Undergraduate Student  
Binus Business School Bina Nusantara University, Indonesia  
(angelica.jolie@binus.ac.id)

activities to meet the changing needs of Indonesian women during and after the pandemic.

**Keywords:** *menstrual health management (MHM), disposable sanitary pads, marketing strategy, Indonesia, Covid-19*

**JEL Codes:** *I11, I12, M31, O33, O53*

---

## **Introduction: Menstrual Health Management (MHM) Issues and Covid-19**

Women have traditionally struggled with menstruation and menstrual health management (MHM), but despite the growing attention toward MHM, there is still a lack of research and socio-political awareness (Sommer et al., 2015). According to PLAN International (2020), over 800 million women, girls, and gender non-binary people around the world are menstruating while also dealing with the Covid-19 pandemic. While the media highlights more about the importance and urgency of vaccines, other things such as MHM seem to be forgotten, especially in rural areas. Now there are challenges to cope with menstrual issues in a global pandemic. Meeting the critical menstrual health management needs of women and girls is essential to an inclusive global response that promotes equality and social inclusion (Sanitation for Millions, 2021).

For many women, the capacity to safely manage their menstrual health and hygiene is still an unmet requirement, owing to the taboo nature of discussing menstruation. Covid-19 has exacerbated menstrual health inequities by causing border closures, panic buying, and stock outs, all of which have disrupted the sanitary napkin supply chain. Due to lockdowns, communal centers such as schools and health clinics have been forced to close, resulting in a shortage of access to both vital menstrual health knowledge and supplies (Norman & Knox, 2021). Curfews and lockdowns lead to loss of income, disruption to supply chains, a brief narrowing of the products and a move to "necessary items" (Pantano et al., 2020) limiting access to sanitary products.

Menstrual health concerns are classified as the secondary impact, as the disruption on the supply chain caused inaccessibility to sanitary products (UNICEF, 2020). Even if the products are available, the prices may increase that women might not be able to afford it due to factors such as unemployment, poverty, restrictions of movement, lockdowns, caused by

Covid-19. A recent study on reusable and non-reusable menstrual products in Spain (Medina-Perucha et al., 2022) became the starting point for this study to uncover the influence of marketing strategies of menstrual products for MHM in Indonesia.

## **Menstrual Products in Indonesia**

Increasing female population and rapid urbanization, rising female literacy and awareness of menstrual health and hygiene, rising disposable income of females, and women empowerment are expected to accelerate the growth of the feminine hygiene products market across the globe. However, the conditions before Covid-19 did not consider how the pandemic may have affected the accessibility and affordability of sanitary products. It is also necessary to recognize that Indonesian consumers have a unique set of local characteristics, including cultural and religious practices. These local characteristics, unique to individual countries, are useful in contextualizing marketing and commercial efforts to suit consumer needs and preferences.

Based on the data from Statistics Indonesia (Badan Pusat Statistik), the population of Indonesia as of 2022 is 274,200,000. From the 274 million people, 135.75 million (49%) are women and 138.45 million (51%) are men (Badan Pusat Statistik, 2022). In addition, the Indonesian population is dominated by Gen Z (born 1997–2012) and Millennials (born 1981–1996). The proportion of Gen Z is 27.94% of the population, while the Millennials make up 25.87% of the population (Badan Pusat Statistik, 2022). Gen Z dominates the use of digital media, and they spend 9 hours or more on their smartphones (Ahmed, 2019; Walker, 2021).

Over half of the women in Indonesia indicated that periods have moderate/high impact on their daily lives, thus opening up further opportunities for engagement with female consumers on period management and available products (Euromonitor, 2022). It is also important to note that female disposable incomes continue to grow in the region, thus supporting women's ability to purchase feminine hygiene products.

The feminine hygiene market, which includes tampons, disposable sanitary pads, menstrual cups, and vaginal health products, makes up a significant share of the personal hygiene market worldwide. There are the

traditional disposable sanitary pads and tampons, as well as the more environmentally friendly menstrual cups, which are reusable and body safe. The feminine hygiene market in 2018, or before Covid-19, ranked China as the largest market for feminine hygiene products worldwide, with 7,901.08 million USD, while Indonesia is in the fifth place with 1,211.32 million USD (Statista, 2021). Sanitary pads make up the largest share of the feminine hygiene market (55%) worldwide. It implies that sanitary pads are the main MHM used by women worldwide. Breaking down the feminine hygiene market per segment, sanitary pads make up the largest share of the feminine hygiene market (55%) worldwide, followed by tampons (38%), and menstrual cups (7%), including other feminine hygiene products (Statista, 2021). A report from PMA (2017) mentioned that 79% of women in Indonesia have everything they need to manage their menstruation, and 92% of Indonesian women stated that they use disposable sanitary pads as their main MHM material (PMA, 2017).

This breakdown of the feminine hygiene market is supported by a previous study from Choi et al. (2021) in South Korea, where the predominant menstrual hygiene products used by all age groups were disposable sanitary pads (89.0%), cloth menstrual pads (4.5%), tampons (4.2%), and menstrual cups (1.6%). Disposable sanitary pads were most common in all age groups, but for those under 30 years old, tampons followed closely behind (6%). Comfort was the most important factor when choosing disposable pads (31.3%) and tampons (41.5%), while natural/organic ingredients were the top consideration for cloth pads (51.4%) and custom fit for menstrual cups (50.7%). However, there was more anxiety than perception of safety among users of all menstrual hygiene products (except cloth pads) and low awareness of toxic shock syndrome (Choi et al., 2021).

The market share of popular disposable sanitary pad brands in Indonesia, are dominated by Laurier, manufactured by Kao (45%), Charm, manufactured by Unicharm (42.10%), and Softex manufactured by Kimberly-Clark (12.90%) (Euromonitor, 2022). Functionality of the product remains an important aspect of the industry innovation efforts. Manufacturers are focusing on products that feature improved leak protection, comfort and are easy to use. Product features are centred around odour control, coolness, or all-night use. These brands innovate continuously on their features in disposable sanitary pads. Other innovation strategies should also consider local culture and religious practices, which include washable disposable sanitary pads to appeal to Muslim women who must

rinse off soiled pads before disposal. Disposable sanitary pads are purchased by Indonesian women frequently or regularly, with a relatively affordable price, convenient locations, and mass promotion by the producer or brands.

## **Review of Related Literature**

### ***Marketing strategy of menstrual products***

Menstrual products refer to items used during menstruation to manage menstrual bleeding, such as sanitary pads, tampons, menstrual cups, and menstrual underwear (Bobel et al., 2020). Sanitary pads, or sanitary napkins, menstrual pads, panty liners, or pads - are the most popular type of menstrual product in Indonesia. They are the most common and readily available menstrual products, but these are non-reusable. Most research has primarily concentrated on exploring the acceptability and usage of reusable products, such as menstrual cups, reusable pads, or menstrual underwear, rather than non-reusable products (Medina-Perucha et al., 2022).

Disposable pads are worn externally to the body in the underwear to absorb menstrual flow. As they are disposed of after a maximum of 8 hours; they are considered consumables which require regular assessment of supply, availability, and affordability. Pads come in various sizes, absorbencies and materials and consist of a layered design made of blends of plastics, rayon, and cotton. Pads should include wings to prevent leakage and keep the pad more securely in place (UNICEF, 2019). One major benefit of sanitary pads is no worries about getting toxic shock syndrome, which makes them a great alternative to tampons. The downside of sanitary pads is the disposable attribute. Women may have to replace the sanitary pad every few hours during menstruation, and throwing out used sanitary pads creates a lot of waste, and environmental problems.

Price is one of the elements of the marketing strategy that has the most flexibility. Prices are subject to swift change, unlike product features and channel commitments. It has been discovered that a consumer's interpretation of price information affects future expectations of a product's performance (Rao & Monroe, 1989). Price is also a huge concern for Indonesian women when they purchase menstrual products, i.e., disposable sanitary pads. Local procurement is often easy and cheap as disposable pads are available in most contexts, but not in very remote areas. In Indonesia, the

price of sanitary pads in other areas outside the island of Java can be double or triple the price compared to Java. Locally produced disposable pads are sometimes available, though with varying quality. There is a lack of cheap, high-quality biodegradable disposable pads on the market.

Cost, accessibility, convenience of use, disposal method, water, and sanitation facilities for changing and washing, as well as any subsequent environmental effects brought on by the chosen product, are all factors to be considered when choosing a product. Girls and women may find it difficult to test the complete range of menstrual management products accessible to them in order to determine which ones work best for them due to ignorance, discrimination, cultural norms, lack of resources, setting, safety concerns, and lack of availability (van Eijk et al., 2021). During the pandemic, providing access to menstrual products is crucial for meeting the health requirements of women (Wood et al., 2022). Covid-19 accelerated shifts to online retailing due to lockdowns and social distancing. Retailers enhanced their online services and delivery options, and it changed the appearance and conduct of traditional stores after the pandemic ends (Pantano et al., 2020).

The promotional mix of disposable sanitary pads is made up of strategies towards customer communication. Promotion only makes up one-half of a marketing conversation. No matter how inventive the approach, if the offer does not address customers wants, which should have been identified through marketing research, it will likely fail (Czinkota et al., 2021). Digitalization in purchasing, consumption, and marketing was already present prior to the emergence of Covid-19. However, the pandemic and the resulting restrictions have led to significant changes in global behaviour, particularly in the digital realm of purchasing and consumption. With the closure of physical stores and the requirement for people to stay at home, there has been a significant increase in the use of digital channels for purchasing and consumption (Danciu, 2021). A survey by KPMG in 2020 found that 33% of customers who previously preferred in-person interactions switched to digital channels (Kakol, 2021). The use of face-to-face channels dropped from 43% to 23%, while digital channels increased from 26% to 44%. Digital channels, especially apps and social media, saw a larger increase than websites. KPMG predicts that digital channels will continue to be the primary means of contact, supporting 45% more customers in the future (Kakol, 2021). Although, a study from Kwon and Lee (2020) suggested that advertising effectiveness tends to be higher when consumers are exposed to TV and digital advertisements simultaneously

(Kwon & Lee, 2020). This is also supported by a study on the role of social media advertising on brand equity and customer response (Zaidi et al., 2022).

During the Covid-19 outbreak, health information system became a crucial issue within a country. Government, mass media and individuals seek and share information about the outbreak mostly through digital media (Suwana et al., 2020). Indonesia is home to 160 million digital media users with YouTube, WhatsApp, Facebook, Instagram, and Twitter as their five primary platforms (Kemp et al., 2020). Gen Z dominates the use of digital media, and they spend 9 hours or more on their smartphones (Ahmed, 2019; Walker, 2021).

### ***Menstrual Health Management in Indonesia***

Menstrual health is defined as “a complete physical, mental, and social wellbeing in relation to the menstrual cycle.” (Babbar et al., 2022; Hennegan et al., 2021). According to Babbar et al. (2022), having good menstrual health is not simply about having access to menstrual products, but also involves having the necessary resources to fully participate in all aspects of life during one’s menstrual cycle. These resources could include things like education, necessary supplies, proper sanitation facilities, supportive environments (such as having teachers and supervisors who are understanding), and access to healthcare professionals who are knowledgeable about menstrual health issues. Hennegan et al. (2021) implied that having the necessary resources, equipment, and support to manage menstruation properly, receiving appropriate medical attention for menstrual discomfort and conditions, promoting a respectful atmosphere that minimizes emotional distress, and being able to engage fully in all aspects of life are all essential elements of a comprehensive understanding of menstrual health. This also includes education of menstrual cycles and self-care. Menstrual health management (MHM) is defined as “women and adolescent girls using a clean material to absorb or collect menstrual blood, and this material can be changed in privacy as often as necessary for the duration of the menstrual period. MHM includes soap and water for washing the body as required, and access to facilities to dispose of used menstrual management materials.” (Sommer et al., 2015). Hence, MHM has a broader understanding which includes the materials (products) as the key for the marketing strategy, education, hygiene factors, health services, disposal facilities, social aspects, and psychological aspects.

According to Borgen Project, a non-profit organization addressing poverty and hunger, women and girls in Indonesia face numerous challenges during menstruation. Women and girls often have poor access to comprehensive information about menstruation, lack of appropriate materials to manage menstrual bleeding, inadequate water, sanitation and hygiene facilities (WASH) and harmful socio-cultural taboos (Johnson, 2020). In addition, there are also myths about using tampons causing virginity loss and stopping the menstrual flow in Indonesian culture. As a result, women and girls seldom utilize tampons. Reusable cloths are the next most often used sanitary item after disposable sanitary pads. Women and girls used them more frequently in rural regions. Indonesia needs to improve access to period products and education about menstruation hygiene and management, particularly in rural areas (Johnson, 2020).

According to UNICEF (2019), 25% of adolescent girls in Indonesia had never discussed menstruation with anybody before their first period, and 17% did not know that menstruation was a physical symptom of puberty. In addition, societal taboos about discarding menstruation products still exist: 78% of mothers and girls cleaned their disposable sanitary pads before putting them in plastic bags and throwing them away. Periods are frequently viewed as filthy and taboo in many Indonesian societies. The women claimed it is important to wash disposable pads after use because they thought menstrual blood was unclean and they wanted to get rid of the smell and hide their period from others.

### ***Research Gap and Research Questions***

Not many studies discussed the business side of MHM in Indonesia. From MHM-specific topics in Indonesia, one study discussed about the MHM in a senior high school in Magelang (Sukini et al., 2021) which focuses on public health rather than the business side. Another study about MHM, sponsored by SMERU Research Institute, focuses on MHM in primary and junior high school (Hastuti et al., 2019). These studies focus on adolescent girls, and only one focuses on MHM among adult women (Sato et al., 2021). This study hopes to bridge the gap between the business aspect of menstrual products, i.e., disposable sanitary pads, and MHM.

Further review of related literature helps to develop the research questions as follows:

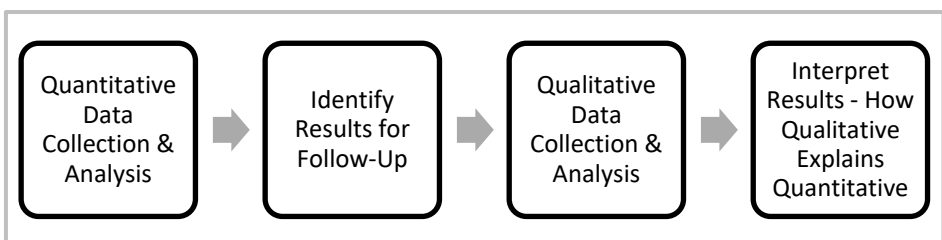
**RQ1:** What was the situation before Covid-19 regarding the marketing strategy of disposable sanitary products to promote better MHM?

- RQ2:** What is the situation after Covid-19 regarding the marketing strategy of disposable sanitary products to promote better MHM?
- RQ3:** What are the challenges of the marketing strategy for disposable sanitary pads in Indonesia to build MHM awareness post Covid-19?

## Methodology

The method used for this study is a mixed methods research, which combines and integrates qualitative and quantitative methods in the same study (Shah et al., 2019). The mixed methods can give equal priority to both quantitative and qualitative parts, or emphasize qualitative more, or emphasize quantitative more. This emphasis depends on the research question, from practical constraints on data collection, or from the need to understand one form of data before proceeding to the next (Molina-Azorin, 2016).

As for the type of mixed methods, this study applies the explanatory sequential mixed method (see *Figure 1*). It is a two-part data collecting project in which the researcher gathers quantitative data in the first phase, analyzes the results, and then builds the qualitative phase in the second phase. The quantitative results usually reveal the types of persons who will be involved. The basic goal of this design is to use qualitative data to help explain things more thoroughly. As a result, it is critical to tie the quantitative data together or connect them to the qualitative results (Creswell & Creswell, 2018).



**Figure 1: Explanatory Sequential Design (Two-Phase Design)**

Source: Modified from Creswell & Creswell (2018)

Studies from Mahajan (2019), Shah et al. (2019), and Yamakoshi et al. (2020), about similar topics in health issues, including MHM, mainly use the mixed method. Mixed method research involves the application of

a well-defined and pre-specified research design that combines qualitative and quantitative components to generate an integrated set of evidence (Regnault et al., 2018). The mixed methods applied in this study are based on previous research from Gambier-Ross et al. (2018). A mixed methods study, involving collection, analysis and synthesis of data obtained through an online survey using closed questions (quantitative) and follow-up interviews (qualitative). Both quantitative and qualitative analysis informed hypothesis development. The hypotheses were developed following the analysis of survey data and interview data, in which the quantitative data were tested against the hypotheses for significance (Gambier-Ross et al., 2018).

As the topic of MHM is not openly or commonly spoken in the Indonesian culture, the use of qualitative data using FGD for predetermined groups may be necessary to gather detailed information about MHM and the use of disposable sanitary pads.

This study uses a questionnaire to obtain primary data, based on previous studies on menstrual practices questionnaire (MPQ). The MPQ is a tool to support comprehensive and standardized assessment of the activities undertaken in order to collect, contain, and remove menstrual blood from the body in self-report survey (Hennegan et al., 2020). Another reference to develop the questionnaire is a study about factors affecting menstrual health management in Ethiopia, in which the study uses a mixed-method (Shallo et al., 2020). The questionnaire is developed to contain information about practices, knowledge and attitudes about menstruation among Indonesian women at a specific age range (*Table 1*).

**Table 1: Summary of the Construct of the Questionnaire and FGD**

No	Variables	Sub variables	Source
<b>Questionnaire</b>			
1	Demographics	Age, location	Badan Pusat Statistik (2020) Hennegan et al. (2020)
2	Marketing strategies	Product	Bobel et al. (2020) Medina-Perucha et al. (2022) Choi et al. (2021)
		Price	Rao & Monroe (1998)
		Place	van Eijk et al. (2021) Pantano et al. (2020)

No	Variables	Sub variables	Source
<b>Questionnaire</b>			
		Promotion	Czinkota et al. (2021) Danciu (2021) Kakol (2021)
3	Disposable sanitary pads	Accessibility. Affordability.	Bobel et al. (2020) Medina-Perucha et al. (2022) Kambala et al. (2020) Wood et al. (2022).
4	Menstrual health management (MHM)	Practices and menstrual education.	Babbar et al. (2022) Hennegan et al. (2020) Hennegan et al. (2021) Shallo et al. (2020) Sukini et al. (2021) Hastuti et al. (2019) Sato et al. (2021)
<b>FGD</b>			
1	Demographics	Age Employment status Income range	Badan Pusat Statistik (2020) Hennegan et al. (2020)
2	Menstrual issues	Pain. Length of period. Heavy flows.	Medina-Perucha et al. (2020) Hennegan et al. (2020) Hennegan et al. (2021)
3	Product issues and hygiene	Brands used. Pads cause irritation. Disposal issues and environmental concerns. WASH in schools and public toilets.	Sommer et al. (2015) Kaur et al. (2018) Hennegan et al. (2020) Hennegan et al. (2021) Shallo et al. (2020) Sukini et al. (2021) Hastuti et al. (2019) Sato et al. (2021)
4	Price issues	Affordability	Bobel et al. (2020) Medina-Perucha et al. (2022)
5	Promotional exposure	Accessibility	Bobel et al. (2020) Medina-Perucha et al. (2022) Kambala et al. (2020) Wood et al. (2022).

Source: Researchers, 2022.

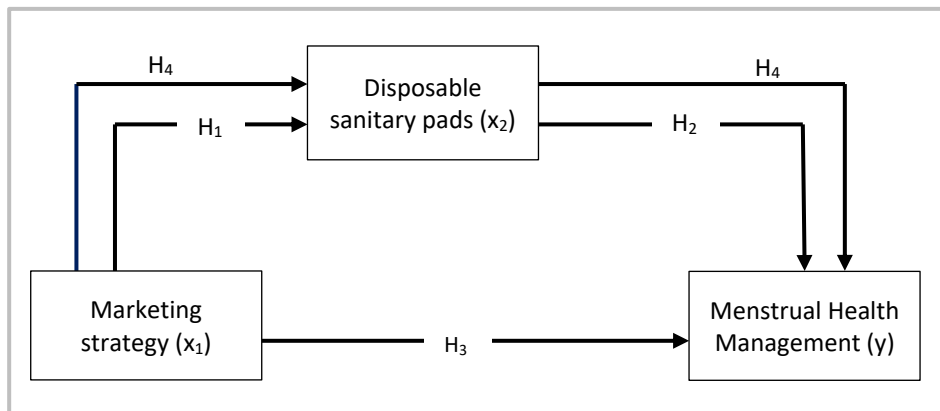
When the quantitative data precede qualitative data, the intention is to test variables with a large sample and then to explore in more depth with a few cases during the qualitative phase (Molina-Azorin, 2016). The qualitative data consists of interviews with selected women to ask their

opinion about MHM, accessibility and affordability of disposable sanitary pads, and the how the marketing strategy of disposable sanitary pads affects their choice of brands.

The study is an empirical research, based on observation and measurement of phenomena, as directly experienced by the authors. The data gathered may be compared against a theory or hypothesis, but the results are still based on real life experience. There are three variables in this study, and these variables are designed as follows (figure 2): the marketing strategy (x1) as the independent variable, disposable sanitary pads (x2) as the mediating variable, and MHM (y) as the dependent variable. From the theoretical framework, the variables' relationship is constructed as follows:

- a. if the marketing strategy (x1) promotes the use of disposable sanitary pads (x2);
- b. if the use of disposable sanitary pads (x2) influences the MHM (y);
- c. if the marketing strategy influences the MHM (y), and
- d. if marketing strategy (x1) and disposable sanitary pads (x2) together influence the MHM (y).

In the study, the hypothesis statement is applied for before and after Covid-19 conditions to test the differences between before and after conditions with respect to the variables (Gambier-Ross et al., 2018). The theoretical framework is shown in *Figure 2*.



**Figure 2: Theoretical Framework of the Study**

Source: Researchers, 2022

The theoretical framework of the study became the basis for the hypotheses statements as follows:

- H1a:** The marketing strategy influences the use of disposable sanitary pads before Covid-19
- H1b:** The marketing strategy influences the use of disposable sanitary pads after Covid-19
- H2a:** The use of disposable sanitary pads influences better MHM before Covid-19
- H2b:** The use of disposable sanitary pads influences better MHM after Covid-19
- H3a:** The marketing strategy influences better MHM before Covid-19
- H3b:** The marketing strategy influences better MHM after Covid-19
- H4a:** The marketing strategy of disposable sanitary pads influences better MHM before Covid-19
- H4b:** The marketing strategy of disposable sanitary pads influences better MHM after Covid-19

Sampling for this study used non-probability sampling, using purposive sampling. The sampling is confined to specific types of people who can provide the desired information, either because they are the only ones who have it, or they conform to some criteria set by the researcher (Sekaran & Bougie, 2016). The primary quantitative data comes from a survey on girls and women in Indonesia from ages 10 to 54. The survey was done online from October to December 2021 due to the pandemic restrictions. To anticipate the unwillingness of response, respondents must fill in the written consent to take part in the survey and were given approximately 10 to 12 minutes to fill in the survey anonymously. The target population is 100,000, with a confidence level of 95% and a 2.5% margin of error, thus the ideal sample size is 1,513 (Krejcie & Morgan, 1970). The survey managed to collect a sample size of 1,516 respondents (N=1,516).

A Focus Group Discussion (FGD) is used to generate information on collective views. They are useful to generate a rich understanding of participants' experiences and beliefs (Mishra, 2016). The optimum size of a focus group is 6 to 8 participants (excluding researchers). The FGD in this study consisted of 20 selected participants (N=20), who are girls/women from 10 to 54 years old. We asked their opinion about MHM, the accessibility and affordability of disposable sanitary pads, and how does the marketing of disposable sanitary pads affect their choice of brands. Informed written consent was obtained from all participants involved in the study.

## Results and Analysis

### Quantitative Findings

The findings consist of two parts: (1) the quantitative findings include summary of the related information from the questionnaire and the results of the hypotheses testing, and (2) the qualitative findings which complement the quantitative findings. The survey was conducted online from October to December 2021, in 34 provinces across Indonesia, prior to the development from 34 to 37 provinces on June 30, 2022.

Table 2 shows the survey results from the age groups. Most respondents are in the age group of 15-19 years old (44.3%), followed by the age group of 20-24 years old (35%) and 10-14 years old (12.8%). It can be concluded that most respondents are Gen-Z, who as “digital natives”, are technology-savvy.

**Table 2: Demographic characteristics quantitative study (N=1,516) by age**

Variable	N = 1,516	%
Age group		
10 - 14	197	12.8
15 - 19	671	44.3
20 - 24	530	35.0
25 - 29	47	3.1
30 - 34	28	1.8
35 - 39	22	1.5
40 - 44	7	0.5
45 - 49	12	0.8
50 - 54	5	0.3
<b>Total</b>	<b>1,516</b>	<b>100.0</b>

Source: Own questionnaire

Table 3 presents the survey results based on the locations (i.e., the provinces in Indonesia). Most respondents come from West Java (40.4%), followed by DKI Jakarta (12.3%) and East Java (5.1%).

**Table 3: Demographic characteristics quantitative study (N=1,516) by location**

Province	N = 1,516	%	Province	N = 1,516	%
Jakarta Capital District	186	12.3	West Kalimantan	8	0.5
West Java	613	40.4	Central Kalimantan	39	2.6
Banten	37	2.4	South Kalimantan	13	0.9
Central Java	76	5.0	East Kalimantan	15	1.0
Yogyakarta Special District	38	2.5	North Kalimantan	0	0
East Java	78	5.1	North Sulawesi	14	0.9
Bali	62	4.1	Gorontalo	6	0.4
Nangroe Aceh Darussalam	0	0	Central Sulawesi	13	0.9
North Sumatra	74	4.9	West Sulawesi	1	0.1
West Sumatra	8	0.5	Southeast Sulawesi	4	0.3
Riau	32	2.1	South Sulawesi	8	0.5
Riau Archipelago	13	0.9	North Maluku	0	0
Jambi	13	0.9	Maluku	0	0
Bengkulu	0	0	West Papua	10	0.7
South Sumatra	68	4.5	Papua	36	2.4
Bangka Belitung	8	0.5	Other countries	23	1.5
Lampung	9	0.6			
West Nusa Tenggara	3	0.2			
East Nusa Tenggara	0	0			
<b>Total</b>	<b>1,516</b>	<b>100</b>			

Source: Researchers, 2022

**Table 4: Types of menstrual products used by respondents (N=1,516)**

Type of menstrual product	N = 1,516	%
Disposable sanitary pads	1,468	96.8
Menstrual cup	12	0.8
Tampons	8	0.5
Reusable sanitary pads	28	1.8
<b>Total</b>	<b>1,516</b>	<b>100</b>

Source: Researchers, 2022

Table 4 shows the types of menstrual products used by the respondents, with disposable sanitary pads as the most popular menstrual product in Indonesia (96.8%). Accordingly, a report from Statista (2021) also shows that disposable sanitary pads (59%) are the most popular menstrual products worldwide.

**Table 5: Brands of disposable sanitary pads used by respondents (N=1,516)**

Brands	Manufacturer	N = 1,516	%
Charm	Unicharm	474	31.3
HersProtex	Wings Group	212	14.0
Laurier	Kao	115	7.6
Softex	Kimberley-Clark	685	45.2
Kotex	Kimberley-Clark	74	4.9
Other brands		391	25.8
I don't use disposable sanitary pads		29	1.9
<b>Total</b>		<b>1,516</b>	<b>100</b>

Source: Researchers, 2022

Table 5 shows which disposable sanitary pad brands are popular among respondents, and the survey shows the majority prefer Softex (45.2%), followed by 2 other brands, Laurier (25.8%), and Charm (31.3%). This is in accordance with a report from Euromonitor (2022) where the top three popular brands of disposable sanitary pads in Indonesia (based on percentage) are Laurier, Charm, and Softex.

### ***Hypotheses Testing***

The hypotheses testing used SEM-PLS. The hypotheses testing compares the value of t-statistics with t-table which is 1.96 or by using a p-value ( $\alpha$ ) compared to 5% or 0.05. Tables 6 and 7 summarized the results of the hypothesis testing before and after Covid-19.

In the model before Covid-19, it shows that the null hypotheses for  $H_1$  and  $H_2$  are accepted, thus the marketing strategy does not influence the use of disposable sanitary pads and the use of disposable sanitary pads does not influence preferable MHM.

**Table 6: Results of hypotheses testing in the model before Covid-19**

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P-values	Decision
Disposable Sanitary Pads (X <sub>2</sub> ) -> Menstrual Health Management (Y)	-0.220	-0.160	0.152	1.446	0.149	H <sub>0</sub> accepted
Marketing Strategy (X <sub>1</sub> ) -> Disposable Sanitary Pads (X <sub>2</sub> )	-0.219	-0.171	0.152	1.437	0.151	H <sub>0</sub> accepted
Marketing Strategy (X <sub>1</sub> ) -> Menstrual Health Management (Y)	0.250	0.261	0.042	6.004	0.000	H <sub>0</sub> rejected
Marketing Strategy (X <sub>1</sub> ) -> Disposable Sanitary Pads (X <sub>2</sub> ) -> Menstrual Health Management (Y)	0.048	0.048	0.012	4.131	0.000	H <sub>0</sub> rejected

Source: Researchers, 2022

The hypotheses testing does imply that before Covid-10, the marketing strategy influences better MHM, and the marketing strategy of disposable sanitary pads influences preferable MHM.

**Table 7: Results of hypotheses testing in the model after Covid-19**

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P-values	Decision
Disposable Sanitary Pads (X <sub>2</sub> ) -> Menstrual Health Management (Y)	-0.262	-0.262	0.063	4.189	0.000	H <sub>0</sub> rejected
Marketing Strategy (X <sub>1</sub> ) -> Disposable Sanitary Pads (X <sub>2</sub> )	-0.335	-0.334	0.041	8.196	0.000	H <sub>0</sub> rejected
Marketing Strategy (X <sub>1</sub> ) -> Menstrual Health Management (Y)	0.216	0.212	0.068	3.155	0.002	H <sub>0</sub> rejected
Marketing Strategy (X <sub>1</sub> ) -> Disposable Sanitary Pads (X <sub>2</sub> ) -> Menstrual Health Management (Y)	0.088	0.087	0.022	3.926	0.000	H <sub>0</sub> rejected

Source: Researchers, 2022

In the model after Covid-19, it shows that all alternate hypotheses are accepted. Therefore, the results after the Covid-19 situation imply that marketing strategy influences the use of disposable sanitary pads, the use of disposable sanitary pads influences better MHM, the marketing strategy influences better MHM, and the marketing strategy of disposable sanitary pads influences preferable MHM.

### ***Qualitative Findings***

The FGD is conducted in 2 teams from the research team. Each team consists of an interviewer and a recorder (written and recording/Zoom), conducting 2 sessions each, with 3 to 5 participants for each session. In this study, there were a total of 20 participants (N=20), divided into 4 sessions.

Table 8 is a summary of the participant characteristics, including the choice of disposable sanitary pad brands among participants and whether their brand choices are accessible and affordable.

**Table 8: Participant characteristics qualitative study (N=20) with affordability and accessibility of disposable sanitary pads**

ID	Age	Occupation	Education	Product issues	Brand used	Price	Place
P1	19	Student	Bachelor	No	Charm	Affordable	Accessible
P2	18	Student	Bachelor	No	Charm	Affordable	Accessible
P3	40	Employee	High school	Price	Charm	Affordable	Accessible
P4	18	Student	High school	No	Charm	Affordable	Accessible
P5	44	Business owner	High school	Price	Laurier	Affordable	Accessible
P6	53	Employee	Master	No	Charm	Affordable	Accessible
P7	44	Business owner	Diploma	No	Charm	Affordable	Accessible
P8	34	Employee	Master	No	Charm	Affordable	Accessible
P9	24	Employee	Bachelor	No	Charm	Affordable	Accessible
P10	44	Employee	Doctoral	No	Charm, Laurier	Affordable	Accessible
P11	17	Student	High school	No disposable bins at school	Charm, Laurier	Affordable	Accessible
P12	22	Student	Bachelor	Pad adhesive too strong; ruined underwear	Softex	Affordable	Accessible
P13	21	Student	Bachelor	No	Laurier	Affordable	Accessible
P14	21	Student	Bachelor	No	Charm	Affordable	Accessible

ID	Age	Occupation	Education	Product issues	Brand used	Price	Place
P15	25	Employee	Bachelor	Gel pads difficult to clean	Softex	Affordable	Accessible
P16	22	Employee	High school	Gel pads; adhesive on wings not sticking	Laurier	Affordable	Accessible
P17	23	Student	Bachelor	Pad adhesive too strong; ruined underwear	Charm, Laurier	Affordable	Accessible
P18	25	Employee	High school	Gel pads; adhesive on wings not sticking	Charm, Laurier	Affordable	Accessible
P19	30	Employee	High school	Adhesive on wings not sticking	Charm, Laurier	Affordable	Accessible
P20	28	Housewife	High school	Pad adhesive too strong; ruined underwear	Charm, Laurier	Affordable	Accessible

Source: Researchers, 2022

The FGD noticed most participants did not have any serious period issues during Covid-19. Most of the issues come from the product and promotion, but rarely from price and place. Participants (P3) and (P5) said they have issues with the price of menstrual products, i.e., disposable sanitary pads, while (P11) had issues about disposing used sanitary pads, mainly in school. (P9) mentioned the packaging design of her usual disposable sanitary pads are not attractive, and look almost the same, as she is sometimes confused between her usual brand with another. (P12), (P15), (P16), (P17), (P18), (P19) and (P20) had issues with the product, mainly in the use of gel in disposable sanitary pads which make it difficult to clean, and in the adhesive of the pads (either too strong or too weak).

Table 9 shows the summary of the marketing strategy of the popular brands. Participants who prefer the Softex brand, (P12) and (P15), particularly the *daun sirih* (natural betel leaf) variant commented because "... The *daun sirih* variant is comfortable for use, ... no skin irritation/rash issues." Traditionally, natural betel leaf extracts, effectively inhibits bacterial growth that cause skin irritation, and reduce odor, which is appealing to Indonesian women. (P16) would like a change in the packaging,

e.g., using ziplocks to ensure the cleanliness of the product. Participants mostly commented on product and promotion, but little or no issues regarding price or place.

**Table 9: Summary of the Marketing Strategy of Disposable Sanitary Pads**

Brand	Marketing strategy			
	Product	Price	Place	Promotion
<i>Laurier</i>	<ul style="list-style-type: none"> <li>• Attractive packaging.</li> <li>• Quick-lock anti leak materials.</li> <li>• Texture too thick.</li> <li>• The gel version is difficult to clean.</li> <li>• Size variation.</li> </ul>	<ul style="list-style-type: none"> <li>• Price is affordable, ranging from IDR 15.000 to IDR 27.000, depending on the product variant and place.</li> <li>• Special attention is emphasized, notably in the eastern part of the country, where the price of sanitary pads can be 2 to 3 times higher due to logistic and distribution costs.</li> </ul>	<ul style="list-style-type: none"> <li>• Easy purchase in convenience stores, mini markets (in the neighborhood), supermarkets, and online.</li> </ul>	<ul style="list-style-type: none"> <li>• All brands introduced special edition packs containing various types of pantyliners, regular, large, and extra-large sizes.</li> <li>• They received positive responses from girls and women as it provided convenience by eliminating the need to buy separate packs for different flows.</li> <li>• However, the promotion was limited to a one-time offer or limited edition offers.</li> </ul>
<i>Charm</i>	<ul style="list-style-type: none"> <li>• Unattractive packaging (bright orange color) that may not be discreet to women buying disposable sanitary pads.</li> <li>• Good absorption attributes.</li> <li>• Size variation.</li> </ul>			
<i>Softex</i>	<ul style="list-style-type: none"> <li>• Attractive packaging</li> <li>• Comfortable material made of cotton, not gel or plastic.</li> <li>• The betel leaf product line is appealing to Indonesian women.</li> <li>• Size variation.</li> </ul>			

Source: Researchers, 2022

Participants (P2), (P6), (P7), (P8) and (P9) also stated that they would prefer if the brands could promote a bundling for a “monthly period package”:, which consist of various types of sanitary pads that could be used for a month according to “light days” and “heavy days”, e.g. a combination of pantyliners, pads for light flow, pads for heavy flow/overnight.

The FGD revealed that participants received their first information about menstrual health from their mothers, and young girls nowadays still look up to their mothers to teach them about self-care. This is in line with a previous study from McCarthy and Lahiri-Dutt (2020), where knowledge about menstruation management is transmitted generationally (as cited in Bobel et al., 2020: 25).

The FGD also learned about participants’ concerns of proper disposal of used menstrual material as a global issue. Most women dispose of used sanitary pads or other menstrual items into household solid waste or garbage bins (Kaur et al., 2018). As stated by participants (P6) and (P7): “... We would be interested if there is a community or program about proper disposal of used menstrual material, because we feel guilty to throw used sanitary pads in the garbage bin, even though they are cleaned, and we are concerned about the environment.” Most participants would also prefer more environmental-friendly material for the disposable sanitary pads. As for education in MHM, participants agree that it should include environmental awareness from the manufacturers’ corporate social responsibility on how they would process the used/disposed sanitary pads. Participants stated that they are also interested in trying reusable sanitary pads to help reduce waste.

The FGD concluded that manufacturers should focus on the product innovation and promotion activities. Some suggestions for policy makers and manufacturers from the participants include campaigns not to use bleaching for disposable sanitary pads, ensure safety and hygiene in the products, and promote pads that have antiseptic/herbal/natural properties. Participants are also willing to try reusable sanitary pads, if the pads meet health and hygiene standards.

### **Implications, Limitations and Further Research**

In Indonesia, there are already disposable sanitary pad brands as top of mind among women, such as Laurier, Charm, and Softex. These brands

have innovated using cool mint, aloe vera and betel leaf, with their soothing and antiseptic properties to reduce skin irritation. However, the brands could consider producing reusable sanitary pads as an environment-friendly alternative, continuous innovation in the packaging and product design, and avoid using chemicals or bleaching agents for the pads.

As most of the respondents of the survey are Gen Z (ages 15-19, and 20-24 years old), social media platforms could help encourage MHM campaign and corporate social responsibility. Policymakers should also be actively involved, especially with increasing environmental concerns among women on where to dispose used sanitary pads. Policymakers could support waste reduction by providing recycling bins; thus reducing tons of waste in landfills.

As Indonesia is a large archipelago country; it needs time and resources to conduct such a survey. Simultaneously, the survey requires the willingness of the respondents to answer, as the subject of MHM is not something that Indonesian women are willing to talk about openly. While the quantitative study included a large sample of women in Indonesia, the study acknowledged the difficulties of using online platforms for data collection (for the quantitative study), limiting the participation of people affected by the digital divide. Unfortunately, the quantitative study did not include education and income range in the questionnaire, so information about education and income range were provided only in the FGD part. The study also realized limitations in FGD, such as observer interference, social pressure, or unwillingness to express opinions.

It would be interesting if the study included the factors that influence each variable for further studies. The findings of the study may not accurately represent the landscape in rural areas as the data collection was mainly conducted in urban regions and among individuals from middle to high-income households. Despite the limitations, this study contributes to understand that the marketing strategy of disposable sanitary pads promotes preferable MHM in Indonesia.

## **Conclusions**

The situation before Covid-19 regarding the marketing strategy of disposable sanitary products was mainly through TV ads, but the study found that it did not influence the use of disposable sanitary pads or promote preferable MHM.

The situation after Covid-19 found that the marketing strategy of disposable sanitary products promotes preferable MHM, particularly through digital media platforms such as YouTube, WhatsApp, Facebook, Instagram, and Twitter. This is because people are staying at home more and using digital media to connect, and manufacturers have tapped into this potential to advertise and promote their products and MHM awareness.

The challenges of the marketing strategy for disposable sanitary pads in Indonesia to build MHM awareness post Covid-19 include the need to reach women in remote areas with limited internet coverage, the reluctance of some women to openly discuss MHM, and the need to address environmental concerns related to the disposal of used sanitary pads. Additionally, the study acknowledges potential limitations of using online platforms for data collection, which may exclude some people affected by the digital divide.

## Bibliography

- Ahmed, N. (2019). Generation Z's Smartphone and Social Media Usage: A Survey. *Journalism and Mass Communication*, 9(3). DOI: <https://doi.org/10.17265/2160-6579/2019.03.001>.
- Babbar, K., Martin, J., Ruiz, J., Parray, A. A., & Sommer, M. (2022). Menstrual health is a public health and human rights issue. *The Lancet Public Health*, 7(1), e10–e11. DOI: [https://doi.org/10.1016/S2468-2667\(21\)00212-7](https://doi.org/10.1016/S2468-2667(21)00212-7).
- Badan Pusat Statistik. (2022). *Perempuan dan Laki-laki di Indonesia 2022*. Badan Pusat Statistik, 49. Retrieved: 16-12-2022, from <https://www.bps.go.id/publication/2022/12/16/a37fb493455d772274cc2314/perempuan-dan-laki-laki-di-indonesia-2022.html>.
- Bobel, C., Winkler, I. T., Fahs, B., Hasson, K. A., Kissling, E. A., & Roberts, T.-A. (Eds.) (2020). *The Palgrave Handbook of Critical Menstruation Studies*. Springer Singapore. DOI: <https://doi.org/10.1007/978-981-15-0614-7>.
- Choi, H., Lim, N.-K., Jung, H., Kim, O., & Park, H.-Y. (2021). Use of Menstrual Sanitary Products in Women of Reproductive Age: Korea Nurses' Health Study. *Osong Public Health and Research Perspectives*, 12(1):20–28. DOI: <https://doi.org/10.24171/j.phrp.2021.12.1.04>.
- Creswell, J. W., & Creswell, J. D. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (5th ed.). SAGE Publication, Inc. ISBN: 978-1-5063-8670-6.
- Czinkota, M. R., Kotabe, Vrontis, D., & Shams, S. M. R. (2021). Designing Effective Promotion and Advertising Strategies. *Marketing Management*. DOI: [https://doi.org/10.1007/978-3-030-66916-4\\_12](https://doi.org/10.1007/978-3-030-66916-4_12).

- Danciu, V. (2021). Adapting and Modernizing the Post-Covid Marketing Policy Under the Impact of Consumption Challenges. *The Romanian Economic Journal*, 79:2–21. DOI: <https://doi.org/10.24818/REJ/2021/79/01>.
- Euromonitor. (2022). *Tissue and Hygiene in Indonesia*. Euromonitor. Retrieved: 16-12-2022, from <https://www.euromonitor.com/tissue-and-hygiene-in-indonesia/report?recid=1893437495165&id=435078#>.
- Gambier-Ross, K., McLernon, D. J., & Morgan, H. M. (2018). A mixed methods exploratory study of women's relationships with and uses of fertility tracking apps. *Digital Health*, 4:205520761878507. DOI: <https://doi.org/10.1177/2055207618785077>.
- Hastuti, H., Dewi, R. K., & Pramana, R. P. (2019). *Menstrual Hygiene Management (MHM): A Case Study of Primary and Junior High School Students in Indonesia*. The SMERU Research Institute, 107. Retrieved: 16-12-2022, from [https://smeru.or.id/sites/default/files/publication/mkm\\_en\\_0.pdf](https://smeru.or.id/sites/default/files/publication/mkm_en_0.pdf).
- Hennegan, J., Nansubuga, A., Akullo, A., Smith, C., & Schwab, K. J. (2020). The Menstrual Practices Questionnaire (MPQ): Development, elaboration, and implications for future research. *Global Health Action*, 13(1):1829402. DOI: <https://doi.org/10.1080/16549716.2020.1829402>.
- Hennegan, J., Winkler, I. T., Bobel, C., Keiser, D., Hampton, J., Larsson, G., Chandra-Mouli, V., Plesons, M., & Mahon, T. (2021). Menstrual health: A definition for policy, practice, and research. *Sexual and Reproductive Health Matters*, 29(1):31–38. DOI: <https://doi.org/10.1080/26410397.2021.1911618>.
- Johnson, S. (2020). *Ameliorating Period Poverty in Indonesia*. Borgen Project. Retrieved: 16-12-2022, from <https://borgenproject.org/period-poverty-in-indonesia/>.
- Kakol, M.-H. (2021). *Going digital, faster*. KPMG. Retrieved: 10-10-2022, from <https://assets.kpmg.com/content/dam/kpmg/xx/pdf/2021/01/going-digital-faster.pdf>.
- Kambala, C., Chinangwa, A., Chipetta, E., Torondel, B., & Morse, T. (2020). Acceptability of menstrual products interventions for menstrual hygiene management among women and girls in Malawi. *Reproductive Health*, (17):185. DOI: <https://doi.org/10.1186/s12978-020-01045-z>.
- Kaur, R., Kaur, K., & Kaur, R. (2018). Menstrual Hygiene, Management, and Waste Disposal: Practices and Challenges Faced by Girls/Women of Developing Countries. *Journal of Environmental and Public Health*, 2018:1–9. DOI: <https://doi.org/10.1155/2018/1730964>.
- Kemp, E., Cowart, K., & Bui, M. (2020). Promoting consumer well-being: Examining emotion regulation strategies in social advertising messages. *Journal of Business Research*, 112:200–209. DOI: <https://doi.org/10.1016/j.jbusres.2020.03.010>.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement*, 30(3):607–610. DOI: <https://doi.org/10.1177/001316447003000308>.
- Kwon, Y., & Lee, H. (2020). When TV Ads and Digital Ads Meet: Cross-media Advertising Effect and Advertising Effect According to Multimedia Usage. *Korean*

- Association for Advertising and Public Relations*, 25, 62–89.  
DOI: <https://doi.org/10.16914/ar.2020.125.62>.
- Mahajan, T. (2019). Imperfect Information in Menstrual Health and the Role of Informed Choice. *Indian Journal of Gender Studies*, 26(1&2):57–78. SAGE Publication. DOI: <https://doi.org/10.1177/0971521518811169>.
- McCarthy, A., and Lahiri-Dutt, K. (2020). Bleeding in Public? Rethinking Narratives of Menstrual Management from Delhi's Slums. Quoted in: Bobel, C. et al. (2020). *The Palgrave Handbook of Critical Menstruation Studies*. Springer Singapore. DOI: <https://doi.org/10.1007/978-981-15-0614-7>.
- Medina-Perucha, L., López-Jiménez, T., Holst, A. S., Jacques-Aviñó, C., Munrós-Feliu, J., Martínez-Bueno, C., Valls-Llobet, C., Pinzón Sanabria, D., Vicente-Hernández, M. M., & Berenguera, A. (2022). Use and perceptions on reusable and non-reusable menstrual products in Spain: A mixed-methods study. *PLOS ONE*, 17(3):e0265646. DOI: <https://doi.org/10.1371/journal.pone.0265646>.
- Mishra, L. (2016). Focus Group Discussion in Qualitative Research. *TechnoLearn: An International Journal of Educational Technology*, 6(1):1. DOI: <https://doi.org/10.5958/2249-5223.2016.00001.2>.
- Molina-Azorin, J. F. (2016). Mixed methods research: An opportunity to improve our studies and our research skills. *European Journal of Management and Business Economics*, 25(2):37–38. DOI: <https://doi.org/10.1016/j.redeem.2016.05.001>.
- Norman, J., & Knox, C. (2021). *Periods in a Pandemic, One Year On in 2021: How Menstrual Health Has Been Impacted Since Covid-19 Begun*. PLAN International. Retrieved: 10-10-2022, from <https://www.plan.org.au/publications/periods-in-a-pandemic-one-year-on/>.
- Pantano, E., Pizzi, G., Scarpi, D., & Dennis, C. (2020). Competing during a pandemic? Retailers' ups and downs during the COVID-19 outbreak. *Journal of Business Research*, 116:209–213. DOI: <https://doi.org/10.1016/j.jbusres.2020.05.036>.
- PLAN International. (2020, May 28). *Periods in a Pandemic*. Retrieved: 01-04-2020, from [https://plan-international.org/uploads/2021/12/mhm\\_report.pdf](https://plan-international.org/uploads/2021/12/mhm_report.pdf).
- PMA. (2017). *Menstrual Hygiene Management: Indonesia 2017* [dataset]. Retrieved: 01-04-2020, from [https://www.pmadata.org/sites/default/files/data\\_product\\_results/PMA2020-Indonesia-R2-MHM-Brief-EN\\_v1.pdf](https://www.pmadata.org/sites/default/files/data_product_results/PMA2020-Indonesia-R2-MHM-Brief-EN_v1.pdf).
- Rao, A. R., & Monroe, K. B. (1989). The Effect of Price, Brand Name, and Store Name on Buyers' Perceptions of Product Quality: An Integrative Review. *Journal of Marketing Research*, 26(3):351–357. DOI: <https://doi.org/10.1177/002224378902600309>.
- Regnault, A., Willgoss, T., & Barbic, S. (2018). Towards the use of mixed methods inquiry as best practice in health outcomes research. *Journal of Patient-Reported Outcomes*, 2(1):19. DOI: <https://doi.org/10.1186/s41687-018-0043-8>.
- Sanitation for Millions. (2021). Menstrual Health and Menstrual Hygiene Management: A contribution of Sanitation for Millions to improved gender equality and safer hygiene. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. Retrieved: 01-04-2020, from <https://www.giz.de/de/html/index.html>.

- Sato, K., Hamidah, U., Ikemi, M., Ushijima, K., Sintawardani, N., & Yamauchi, T. (2021). Menstruation and Menstrual Hygiene Management: A Case Study of Adult Females in an Urban Slum of Indonesia. *Sanitation Value Chain*, 5(2)083–097. DOI: <https://doi.org/10.34416/svc.00071>.
- Sekaran, U., & Bougie, R. (2016). *Research Methods for Business: A Skill-Building Approach* (7th ed.). John Wiley & Sons, Ltd. ISBN: 978-1-1192-6684-6.
- Shah, V., Nabwera, H. M., Sosseh, F., Jallow, Y., Comma, E., Keita, O., & Torondel, B. (2019). A rite of passage: A mixed methodology study about knowledge, perceptions and practices of menstrual hygiene management in rural Gambia. *BMC Public Health*, 19(1):277. DOI: <https://doi.org/10.1186/s12889-019-6599-2>.
- Shallo, S. A., Willi, W., & Abubeker, A. (2020). Factors Affecting Menstrual Hygiene Management Practice Among School Adolescents in Ambo, Western Ethiopia, 2018: A Cross-Sectional Mixed-Method Study. *Risk Management and Healthcare Policy*, 13:1579–1587. DOI: <https://doi.org/10.2147/RMHP.S267534>.
- Sommer, M., Hirsch, J. S., Nathanson, C., & Parker, R. G. (2015). Framing Health Matters: Comfortably, Safely, and Without Shame: Defining Menstrual Hygiene Management as a Public Health Issue. *American Journal of Public Health*, 105(7):10. DOI: <https://doi.org/10.2105/AJPH.2014.302525>.
- Statista. (2021). *Consumer Markets: Feminine Hygiene*. Statista. Retrieved: 10-10-2022, from <https://www.statista.com/outlook/cmo/tissue-hygiene-paper/feminine-hygiene/indonesia>.
- Sukini, T., Widatiningsih, S., & Rofiah, S. (2021). Menstrual Hygiene Management Practice in Magelang Senior High School. *Midwifery and Nursing Research*, 3(1): 33–40. DOI: <https://doi.org/10.31983/manr.v3i1.6808>.
- Suwana, F., Pramiyanti, A., Mayangsari, I., Nuraeni, R., & Firdaus, Y. (2020). DIGITAL MEDIA USE OF GEN Z DURING COVID-19 PANDEMIC. *Jurnal Sosioteknologi*, 19(3):14. DOI: <https://doi.org/10.5614/sostek.itbj.2020.19.3.2>.
- UNICEF. (2019). *UNICEF Guide to Menstrual Hygiene Materials*. UNICEF. Retrieved: 16-12-2022, from <https://www.unicef.org/media/91346/file/UNICEF-Guide-menstrual-hygiene-materials-2019.pdf>.
- UNICEF. (2020). *UNICEF Brief: Mitigating the Impacts of Covid-19 and Menstrual Health and Hygiene*. UNICEF. Retrieved: 16-12-2022, from <https://www.unicef.org/media/95496/file/UNICEF-Brief-Mitigating-the-impacts-of-COVID-19-on-menstrual-health-and-hygiene.pdf>.
- van Eijk, A. M., Jayasinghe, N., Zulaika, G., Mason, L., Sivakami, M., Unger, H. W., & Phillips-Howard, P. A. (2021). Exploring menstrual products: A systematic review and meta-analysis of reusable menstrual pads for public health internationally. *Plos One*, 16(9):e0257610. DOI: <https://doi.org/10.1371/journal.pone.0257610>.
- Walker, B. (2021). *Generation Z spend 10.6 hours engaging with online content every day*. Retrieved: 10-10-2022, from <https://wearearise.com/generation-z-spend-10-6-hours-a-day-engaging-with-online-content-every-day>.

- Wood, S. N., Milkovich, R., Thiongo, M., Byrne, M. E., Devoto, B., Wamue-Ngare, G., Decker, M. R., & Gichangi, P. (2022). Product-access challenges to menstrual health throughout the COVID-19 pandemic among a cohort of adolescent girls and young women in Nairobi, Kenya. *eClinicalMedicine*, 49:101482. DOI: <https://doi.org/10.1016/j.eclinm.2022.101482>.
- Yamakoshi, B., Burgers, L., Sagan, S., Muralidharan, A., Mahon, T., Barrington, D., Wilson, E., Jurga, I., Hekster, O., Thijssen, S., Garcon, S., Sauer, J., & Kamowa, V. (2020). *Brief: Mitigating the impacts of COVID-19 and menstrual health and hygiene*. UNICEF. Retrieved: 15-06-2020, from <https://www.unicef.org/documents/mitigating-impacts-covid-19-menstrual-health-and-hygiene>.
- Zaidi, E. Z., Ahmed, R. R., & Raza, S. (2022). Role Of Social Media Marketing in SME Sector Performance. *Transformations in Business and Economics*, 21(2(56)):275–304. Retrieved: 02-03-2023, from <http://www.transformations.knf.vu.lt/56>.