Quality of Implant Contraceptives According to Provider: Analysis of Customer Satisfaction Index (CSI)

Oktriyanto[1*)], Hilma Amrullah[2], Yenie Wulandari[3]

[1,2] National Research and Innovation Agency
[3] Representative of the Banten Province National Population and Family Planning Agency

ARTICLE INFO

ABSTRACT

Provider (doctor/midwife) satisfaction with the quality of implanted contraception is an important factor to increase Long-acting reversible contraceptives (LARCs) participation in Couples of Reproductive Age. This study aims to determine the level of provider satisfaction with the quality of contraceptive implants produced by 3 companies (PT Catur Dakwah Crane Farmasi, PT X, and PT Y). The research design is a cross-sectional study. Data were obtained through interviews using a questionnaire. The research locations were conducted in Cilegon City and Serang City, Banten Province. Data analysis used descriptive analysis and the Customer Satisfaction Index (CSI). The results showed that the level of provider satisfaction with the quality of implant contraception from PT Catur Dakwah Crane Farmasi was higher (CSI value = 85.22) compared to the other two companies, namely PT X (CSI value = 71.34) and PT Y (CSI value = 72.81). Based on the findings above, it is hoped that the three companies or other companies can improve the quality of their products to increase provider satisfaction with implanted contraception.

INTRODUCTION

Implant contraception is a contraceptive device that is placed under the skin layer on the inner side of the upper arm. The advantages of using implanted contraception include: safe to use, high effectiveness, long-term protection, quick return of fertility after extraction, can be removal at any time, being free from the influence of the hormone estrogen, not interfering with intercourse, and not interfering with breast milk production and can be used postpartum (Owen et al., 2013; López del Cerro et al., 2018; Rocca et al., 2021; Botfield et al., 2022). Implant contraception apart from having high effectiveness in preventing pregnancy is also more cost-effective compared to other contraceptives (Linet et al., 2021; Weisberg et al., 2014), although other studies have found that the initial cost of installing implanted contraception is also considered more expensive (Bahamondes et al., 2019).

Besides having various advantages, implant contraception has some disadvantages in its use. Disadvantages of using implanted contraceptives include: acceptors need to return to the health facility when they experience complaints or want to stop using implanted contraceptives, affect menstruation or disruption of the menstrual cycle, weight gain or loss, bleeding, breast tenderness, acne, depression, implants which are in the biceps so it is difficult to find when it is about to be removed, and does not protect against Sexually Transmitted Infections or HIV such as condom contraception (Rahayu & Ulfah, 2016; Odom et al., 2017; Amran, 2019; Romano & Braun-Courville, 2019; Odwe et al., 2020).

2017 Indonesian Demographic and Health Survey (IDHS) shows that as many as 4.7 percent of married women use implanted contraception. Then, data from the 2019 Population, Family Planning and Family Development Program Performance and Accountability Survey (PPAS) stated that there was an increase in the use of implanted

contraception by 0.4 percent compared to the 2017 IDHS, which was 5.1 percent. Implants are Long-Acting Reversible Contraceptives (LARCs). Based on PPAS data for 2019, implant contraception is the most popular contraceptive method compared to other LARCs (Implan = 5.1%, Intrauterine Device/IUD = 4.6%, Tubectomy =3.7%, and Vasectomy =0.1%).

The use of implant contraception has also been shown to reduce the crude birth ratio (CBR), maternal and newborn morbidity, and the number of women with high-risk pregnancies giving birth (Gupta et al., 2019). However, the use of implant contraception is not optimal in the community because there are still myths about the use of implant contraception, access to implant contraception is relatively more difficult and counseling for prospective contraceptive acceptors is not maximized (Bahamondes et al., 2019). Parity and age have a significant relationship to the use of implant contraception. Women with high parity and a high-risk age have a higher chance of using implant contraception than women with low parity (Nuraini et al., 2021).

The quality of implant contraception is one factor that influences consumer satisfaction (acceptors) and intermediate consumers (provider = doctor/midwife). According to Imron (2019), product quality is determined by: a set of uses and functions, performance, durability, compliance with specifications, product aesthetics, and product impression/perceived quality. Products with good quality and reliability will make consumers loyal to using the product (continuous use) and will recommend it to others (Samir et al., 2021; Taufik et al., 2022). Then health workers also influence the use of implanted contraceptive methods on acceptors, especially in providing clear information to acceptors (Laput et al., 2021).

Much research has been conducted on acceptor satisfaction with the use of implant contraception (Ndari et al., 2016; Sanders et al., 2018; Amran., 2019; Setiati et al., 2021), however, research is related to the provider (doctor/midwife) satisfaction with Implant product quality as an intermediate consumer, which is one of the factors in implant acceptor satisfaction, has not been carried out much, especially in Indonesia. Research related to provider (doctor/midwife) satisfaction with implant products circulating in the community is very important to do to improve the quality of implant products and in the end, the Reproductive Age Couples are confident and believe that the implant used is a good choice for delaying, sparing and terminate the pregnancy. This study aims to determine provider satisfaction with the quality of contraceptive implants in Banten Province which are produced by: 1) PT Catur Dakwah Crane Farmasi, 2) PT X, and 3) PT Y.

METHOD

This study used a cross-sectional study design. Data were obtained through interviews using a questionnaire with the help of the Google form application. The use of the Google form aims to reduce the length of survey activities (saving time) where once the data has been collected it does not require data entry. The research locations were carried out in 2 (two) cities, namely: Cilegon City and Serang City, Banten Province. The choice of location is based on the readiness of the area to carry out the research, besides that it also considers a large number of implant acceptors to be served at the time of the research. Data collection was carried out for 5 days, namely May 16-20 2022.

Respondents in this study were 20 people. The respondents consisted of 10 providers from Cilegon City and 10 providers from Serang City. Each provider implanted 6 acceptors consisting of 2 acceptors who had implants from PT Catur Dakwah Crane Farmasi, 2 acceptors who had implants from PT X, and 2 acceptors who had implants from PT Y (Figure 1).
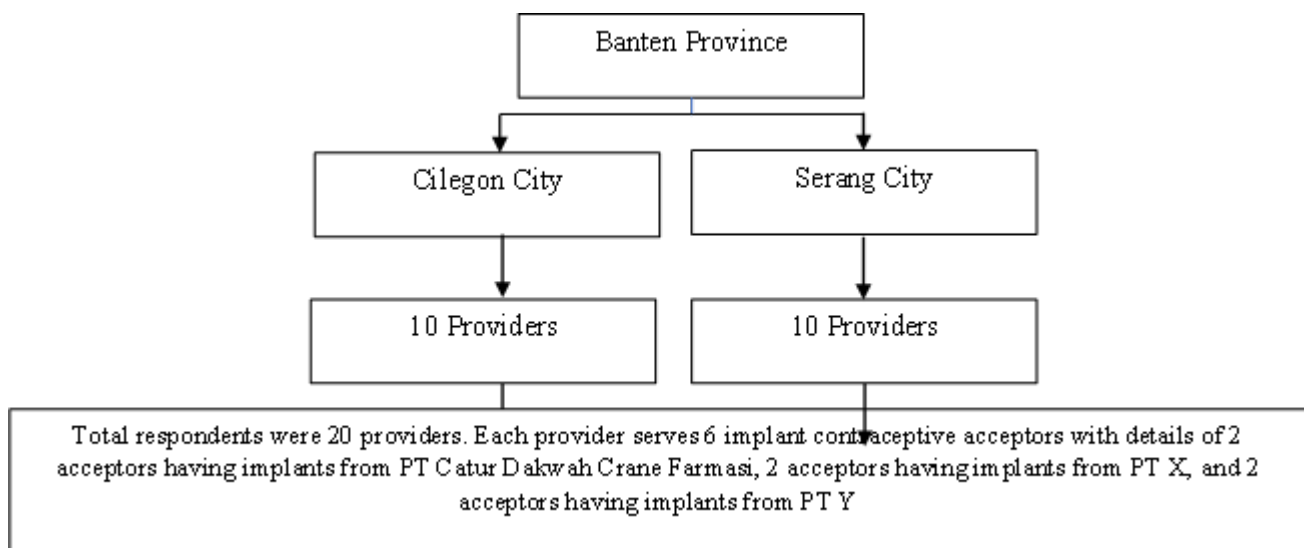

Figure 1. Determination of the Number of Respondents

The instrument in this study is intended for providers using a questionnaire that is entered in the Google form application. The questionnaire consists of 2 (two) parts, namely: 1) Respondent characteristics and 2) Respondent satisfaction with the quality of the three types of implant products. In the section on provider satisfaction with three types of implant products and acceptor satisfaction with implant installation services using a Likert measurement scale. In this instrument, respondents were asked to answer the level of expectation (importance) and reality (performance) on each question attribute.

In measuring provider satisfaction with the quality of implant products, this study divides the quality into three aspects, namely: product packaging, product information,

and product convenience. From each variable in the three aspects, the level of conformity between expectations and reality can be seen. Then an analysis was carried out using the Customer Satisfaction Index (CSI) method to measure the level of provider satisfaction with the three implant products.

Measurement of the level of expectation and perceived level of reality uses a Likert scale rating from 1 to 4 with the following criteria: (1) Strongly Disagree; (2) Disagree; (3) Agree and (4) Strongly Agree. Measuring the overall level of customer satisfaction using CSI calculations.

Analysis of the research data was carried out using descriptive statistical analysis and CSI. Descriptive statistical analysis was used to identify the characteristics of the respondents, while CSI analysis was used to calculate the provider's satisfaction index for the three types of implant products and the acceptor's satisfaction index for the implant service. The following is the calculation to obtain the provider satisfaction index:

1. Determining the Mean Importance Score (MIS)

MIS is the average value of the provider's expectation level for each variable or attribute which can be calculated using the equation:

$$MIS_i = \frac{\sum_{i=1}^n Y_i}{n}$$

description:
n = number of respondents
Y_i = expected value of the i-th attribute

2. Determine the value of the Mean Satisfaction Score (MSS)

MSS is the average value of the level of reality felt by the provider for each variable or attribute. MSS can be calculated using the equation:

$$MSS_i = \frac{\sum_{i=1}^n X_i}{n}$$

description:
n = number of respondents
X_i = reality value of the i-th attribute

3. Calculating Weighting Factor (WF)

This weight is the average expected value that is converted into a percentage number of the total average expectations of all the attributes tested, so that a total WF value of 100% is obtained. This WF can be calculated using the equation:

$$WF_i = \frac{MIS_i}{\sum_{i=1}^n MIS_i}$$

4. Calculating Weighting Score (WS)

This weight is the multiplication of the average perceived level of reality as the MSS (Mean Satisfaction Score) for each attribute and the WF of each attribute. The equation used is:

$$WS_i = WF_i \; x \; MSS_i \; .$$

5. Calculating Total Weighting (WT)

Weighting Total (WT) is calculated by adding up WS_i of all attributes by using the equation:

$$WT = \sum_{i=1}^p WS_i.$$

description:
p = p-th attribute

6. Calculate the Customer Satisfaction Index (CSI), namely WT divided by the maximum scale used and then multiplied by 100 using the following equation:

$$CSI = \frac{\sum_{i=1}^p WS_i}{HS} \times 100$$

description:
p = p-th attribute
HS = (highest scale) The maximum scale used.

The CSI scores in this study were grouped into 4 (four) criteria from dissatisfied to very satisfied from the Likert scale (1-4) for the questionnaire and then converted using a scale of 100 to facilitate analysis. These criteria can be divided into 4 (four) with the following calculation:

1. Minimum Value: 1/4 ×100=25
2. Maximum Value : 4/4 ×100=100
3. Range: 100-25 = 75
4. Many Classes : 4
5. Class Length: 75 /4 = 18.75 ≈19

The scale intervals and criteria for calculating CSI are divided into 4 (four), namely the scale intervals 25-43 with the criteria of "very dissatisfied", 44-62 with the criteria of "not satisfied", 63-81 with the criteria of "satisfied" and 82-100 including the criteria for " very satisfied"

RESULT AND DISCUSSION

Provider Characteristics

This study shows that the respondents are spread equally in the two research locations (Cilegon City and Serang City), namely 50 percent each. Based on the age of the respondents, the older age group (> 40 years) is more numerous than the younger respondents (< 40 years). Based on the level of education, more providers have a diploma education than those who have a bachelor's degree or bachelor's degree, or master's degree (Table 1).

Table 1.
Distribution of Respondent Characteristics

Characteristics of Respondents	Frequency	Percentage
Regency/City		
- Serang City	10	50,0
- Cilegon City	10	50,0
Age		
- ≤ 40 years	9	45,0
- > 40 years	11	55,0
Education		
- Diploma	12	60,0
- S1/S2	8	40,0
Provider history of training CTUs (N=20)		
- Yes	17	85,0
- No	3	15,0
Number of CTU trainings attended (N= 17)		
- 1 times	10	58,8
- >1 times	7	41,2
Last time attended CTU training (N = 17)		
- ≤ 5 years	6	35,3
- > 5 years	11	64,7

Source: primary data processing

Most of the respondents had attended Contraceptive Technology Update (CTU) training, but there were still providers who had never attended CTU training (15%). Of the respondents who had attended CTU training, some providers had more than 1 CTU training (41.2%). However, from providers who have attended CTU training, the majority of respondents have attended CTU training for more than five years (64.7%). Previous studies have also found that there are providers (midwives) who are not qualified to provide services, because they have never received CTU training (Titaley et al., 2017).

Judging from the experience of providers regarding the installation of contraceptive implants, as many as 78 percent have had implants for more than four (4) years. This finding confirms previous research that many providers have not received refreshments regarding CTU training (Mardiyono et al., 2020). When viewed from the problems/obstacles in the installation of implant contraception, the majority of providers have experienced and found obstacles related to implant placement with a percentage of 89 percent. The problems that have been encountered include 1) The implant product is sticky or sticks to the trocar during implant placement (70.6%); 2) The plunger design was inconvenient to use during the first and second implant placement (70.6%); 3) The inserter (trocar) is uncomfortable during the implant/blunt installation process (64.7%); 4) Bisturi are not comfortable to wear/not sharp (52.9%), and 5) Excess anesthetic resulting in thickening of the skin/difficult to install (11.8%).

All respondents had received reports of complaints regarding the use of implanted contraception. Irregular menstruation is a complaint/problem experienced by the majority of providers related to implant placement (94.7%), followed by weight gain (63.2%), headaches (57.9%), pain/bruises in the hands (52.6%), no menstruation and bleeding (36.8% each), spotty, high blood pressure and nausea (15.8% each), infection after insertion and weight loss (10% each) .5%), the baby does not want to drink breast milk, decreased libido, allergies and fatigue/weakness (5.3% each). All respondents who received complaints from acceptors who had had contraceptive implants installed took action in the form of giving repeat KIE to provide understanding to acceptors (100.0%), then if there were still problems due to implant placement, the provider gave medication, up to removal of the implant (each each of 78.9% and 63.2%). For cases that cannot be handled, the provider provides referral action (10.5%).

All respondents had received reports of complaints regarding the use of implanted contraception. Irregular menstruation is a complaint/problem experienced by the majority of providers related to implant placement (94.7%), followed by weight gain (63.2%), headaches (57.9%), pain/bruises in the hands (52.6%), no menstruation and bleeding (36.8% each), spotty, high blood pressure and nausea (15.8% each), infection after insertion and weight loss (10% each) .5%), the baby does not want to drink breast milk, decreased libido, allergies and fatigue/weakness (5.3% each). All respondents who received complaints from acceptors who had had contraceptive implants installed took action in the form of giving repeat KIE to provide understanding to acceptors (100.0%), then if there were still problems due to implant placement, the provider gave medication, up to the removal of the implant (each of 78.9% and 63.2%). For cases that cannot be handled, the provider provides referral action (10.5%).

Provider's Satisfaction with the Quality of Three Types of Implant Contraceptive Products

In the level of conformity between provider expectations and reality regarding the quality of implant contraception, product A has the highest score compared to products B and C. In product A, the packaging aspect has the highest value for its suitability level (92.8%) followed by product information aspects (91.7%) and aspects of ease and convenience of product use (86.8%). For Products B and C, the packaging aspect also has the highest score, but the ease and convenience aspect of using the product is higher than the product information aspect.

In the aspect of packaging, the variable "Attractive product packaging" is the variable with the highest conformity level for the three products (products A, B, and C). Thus, the perception of providers prioritizes attractive packaging compared to other variables from the aspect of packaging. According to Sudjana (2020), an attractive packaging design is an important factor for consumers to use or buy a product. The results of research by Samir et al., (2021), consumer satisfaction is strongly influenced by attractive packaging designs. The variable availability of trocar trays to keep contraceptive implants in a safe condition when distribution and storage occurs is high inequality between the three implant products. Product A has a very high conformity rate (94.7%) compared to products B and C (64.5% and 60.5% respectively). This condition is because product A has a trocar tray, while other products do not have it so products B and C are very risky during distribution, storage, and during implant service (not neat).

Based on the product information aspect, the variable "Having clear information that the product can be used for breastfeeding and postpartum mothers" has the lowest value compared to other variables. The level of conformity in product A related to the information variable regarding implant products that can be used for breastfeeding and postpartum mothers is higher than in products B and C because product A clearly describes this information in the product information section. According to Binobead et.al (2022), clear information regarding products is very important because it can positively correlate with knowledge and usage practices by consumers.

Based on the aspect of ease and convenience of using the product, the related variable "The implant product is not sticky (not attached to the trocar) during implant placement" among the three products has a suitability level with a wide enough gap (Product A = 93.4%, B = 75, 0%, and C = 65.8%). Product A has a high level of conformity because the provider feels that the implant product is not sticky (does not stick to the trocar). The related variable "The plunger design is easy and comfortable to use during the first and second implant placement process" is the strength variable of product C, where the conformity level of product C is the highest compared to products A and B.

The plunger design on product C is integrated into the trocar and is easy to use. Unlike product A, the plunger (pusher) is separated from the trocar so it can fall (unhygienic and impractical) and feels less sturdy, making it difficult to push the implant rod. Variable related to "Implant product has a disposable trocar design", product C has the highest level of conformity and product A has the lowest level of conformity. This condition is caused by product A having many and separate equipment so it is considered washable and can be used many times, while product B, especially product C, has a pusher form that allows blood to

enter the trocar so that the product cannot/difficult to wash. Disposable trocars in implant products can reduce the risk of disease transmission (Steiner et al 2010). Some of the results of previous studies found that the ease and convenience of using a product have a significant effect on consumer satisfaction and can increase the added value of a product (Insani, 2013; Osman, 2020).

Table 2 Level of Concordance between Provider Expectations and Reality Regarding the Quality of Implant Contraceptives

Variabel	Expectation Level	Reality Level A	Reality Level B	Reality Level C	Conformity Level A	Conformity Level B	Conformity Level C
	Yi	XiA	XiB	XiC	%	%	%
Product Packaging Aspects					92,8	76,1	80,0
- Attractive product packaging	69	68	57	64	98,6	82,6	92,8
- The packaging is safe from the possibility of damage	71	68	57	61	95,8	80,3	85,9
- Availability of trocar trays (tray) to keep trocars in a safe condition during distribution and storage	76	72	49	46	94,7	64,5	60,5
- Product packaging makes it easier for providers to check (visual check) the number of implants in the trocar before installation	76	64	59	61	84,2	77,6	80,3
- Product packaging makes it easier for providers to return the implant to its original position if there is an implant coming out at the end, after the visual check process	77	70	58	62	90,9	75,3	80,5
Product Information Aspects					91,7	75,3	72,9
- Have clear information that the product can be used for breastfeeding mothers	77	70	55	54	90,9	71,4	70,1
- Have clear information that the product can be used postpartum	75	67	55	52	89,3	73,3	69,3
- Have clear information about contraindications	75	70	58	56	93,3	77,3	74,7
- Have clear information about the side effects of using the product	76	71	60	59	93,4	78,9	77,6
Aspects of Ease and Convenience of Product Use					86,8	75,7	78,9
- Implant products are easy and comfortable to apply during subdermal insertion	77	71	58	56	92,2	75,3	72,7
- Inserter (trokar) is easy and comfortable during the implant installation process	77	67	61	61	87,0	79,2	79,2
- The plunger design is easy and comfortable to use during the first and second implant placement	77	62	55	65	80,5	71,4	84,4
- Implant products are not sticky (not attached to the trocar) during implant placement	76	71	57	50	93,4	75,0	65,8
- Implant products have a disposable trocar design	77	60	61	69	77,9	79,2	89,6
- The duration of implant installation does not require a long time	77	69	57	63	89,6	74,0	81,8

Notes:
Product A: PT Catur Dakwah Crane Farmasi
Product B: PT X
Product C : PT Y
Answer choice 1: Strongly Disagree
Answer choice 2: Disagree
Answer choice 3: Agree
Answer choice 4 : Strongly Agree
Source: primary data processing

Based on the results of calculations using the customer satisfaction index (CSI) based on three (3) aspects, namely: product packaging, product information, and ease/convenience of product use that product A produced by PT Catur Dakwah Crane Farmasi has the highest CSI value (85.52) compared to products B and C (respectively of 72.81 and 71.34). This means that consumers, in this case, are providers, have the perception that product A has the best quality compared to products B and C based on each of the variables asked in this study.

Table 3 Level of Provider Satisfaction with Implant Products

Dimensi	Average expectation MIS	Average reality MSS	Weight Factors (WF)	Weight Score (WS)
Aspects of Product Packaging A	3,69	3,42	32,60	111,49
Aspects of Product Information A	3,79	3,48	33,46	116,28
Aspects of Ease and Convenience of Product Use A	3,84	3,33	33,94	113,13
	11,32		100,00	
Weight Total (WT)				340,90
CSI Product A				85,22
Aspects of Product Packaging B	3,69	2,80	32,60	91,28
Aspects of Product Information B	3,79	2,85	33,46	95,36
Aspects of Ease and Convenience of Product Use B	3,84	2,91	33,94	98,71
	11,32		100,00	
Weight Total (WT)				285,35
CSI Product B				71,34
Aspects of Product Packaging C	3,69	2,94	32,60	95,84
Aspects of Product Information C	3,79	2,76	33,46	92,44
Aspects of Ease and Convenience of Product Use C	3,84	3,03	33,94	102,95
	11,32		100,00	
Weight Total (WT)				291,23
CSI Product C				72,81

Noted:
Product A   : PT Catur Dakwah Crane Farmasi
Product B   : PT X
Product C   : PT Y
Source: primary data processing

Providers (midwives/doctors) as intermediate consumers who serve the installation of implant products often get implants from different manufacturers, this can affect provider satisfaction with the implant products used. Consumers can provide an assessment of a product including using or ignoring the available products. As consumers, providers have views and preferences in choosing products to use, especially regarding the quality of a product (Amilia & Asmara, 2017; Talikadze & Kharaishvili, 2022). Consumer satisfaction provides an overview of product quality so that they tend to recommend and increase the possibility of reuse. (Ladhari et al., 2017).

LIMITATIONS OF THE STUDY

Evaluation of implant product quality is only seen from three (3) aspects, namely: aspects of packaging, information, and ease/convenience of product use. Related aspects related to the composition or content of implants were not carried out in this study.

CONCLUSIONS AND SUGGESTIONS

The level of provider satisfaction with the quality of implant products from the three companies (PT Catur Dakwah Crane Pharmacy, PT X, PT Y) is good. However, implant products from PT Catur Dakwah Crane Pharmacy have a higher satisfaction score (very satisfied category) compared to the other two companies (satisfied category). Implant products from PT Catur Dakwah Crane Pharmacy from all the variables asked have a higher level of conformity than the other two companies, except for the following variables: 1) The plunger design is easy and comfortable to use during the first and second implant installation processes, and; 2) Implant products have a disposable trocar design. Based on these findings, it is hoped that the three companies or other companies can improve the quality of their products so that provider satisfaction with implant

products will increase and ultimately the success of the national family planning program can be successful in its implementation.

ACKNOWLEDGMENT

CONFLICT OF INTEREST STATEMENT

There are no possible conflicts of interest with respect to the authoring and publishing of this work, according to the authors

REFERENCES

Amilia, S., & Asmara, M. O. (2017). Pengaruh citra merek, harga, dan kualitas produk terhadap keputusan pembelian handphone merek Xiaomi di Kota Langsa. *Jurnal Manajemen Dan Keuangan Unsam*, *6*(1), 660–669. Retrieved from https://www.ejurnalunsam.id/index.php/jmk/article/view/213

Amran, H. F. (2019). Analisis Efek Samping Penggunaan Metode Kontrasepsi Implan Di Wilayah Kerja Puskesmas Harapan Raya Pekanbaru. *Jurnal Medika Usada*, *2*(2), 6–15. doi: https://doi.org/10.54107/medikausada.v2i2.50

Bahamondes, L., Fernandes, A., Monteiro, I., & Bahamondes, M. V. (2019). Long-acting reversible contraceptive (LARCs)

methods. *Best Practice and Research: Clinical Obstetrics and Gynaecology*, *66*(xxxx), 1–13. doi: https://doi.org/10.1016/j.bpobgyn.2019.12.002

Binobead, M. A., Alotaibi, M. A., AlSedairy, S. A., Al-Harbi, L. N., Arzoo, S., & Al-Qahtani, W. H. (2022). Awareness and usage of nutrition information and effect of sociodemographic characteristics on various aspects of food labels in Al-Ahsa, Saudi Arabia. Conocimiento y uso de la información nutricional y efecto de las características sociodemográficas sobre diversos aspectos del etiquetado de alimentos en Al-Ahsa, Arabia Saudí. *Nutricion hospitalaria*, *39*(5), 1106–1116. doi: https://doi.org/10.20960/nh.04087

Botfield, J. R., Tulloch, M., Contziu, H., Wright, S. M., Phipps, H., McGeechan, K., Bateson, D., & Black, K. I. (2022). Feasibility, acceptability and sustainability of postpartum contraceptive implant provision by midwives in NSW public hospitals. *Women and Birth*, *35*(5), e439–e445.doi: https://doi.org/10.1016/j.wombi.2021.11.002

Gupta, S., Ramsay, P., Mola, G., McGeechan, K., Bolnga, J., Kelly-Hanku, A., & Black, K. I. (2019). Impact of the contraceptive implant on maternal and neonatal morbidity and mortality in rural Papua New Guinea: a retrospective observational cohort study. *Contraception*, *100*(1), 42–47. doi: https://doi.org/10.1016/j.contraception.2019.03.042

Imron, I. (2019). Analisa pengaruh kualitas produk terhadap kepuasan konsumen menggunakan metode kuantitatif pada CV. Meubele Berkah Tangerang. *IJSE: Indonesian Journal on Software Engineering*, *5*(1), 19-28. doi: https://doi.org/10.31294/ijse.v5i1.5861

Insani, E. P. (2013). Analisis pengaruh kenyamanan terhadap minat beli secara online pada pemesanan tiket kereta api melalui website resmi PT. KAI. *Jurnal Sains Pemasaran Indonesia*, *12*(3), 241–260. Retrieved from https://ejournal.undip.ac.id/index.php/jspi/article/view/14013

Ladhari, R., Souiden, N., & Dufour, B. (2017). The role of emotions in utilitarian service settings: The effects of emotional satisfaction on product perception and behavioral intentions. *Journal of Retailing and Consumer Services*, *34*, 10–18. doi: https://doi.org/https://doi.org/10.1016/j.jretconser.2016.09.005

Laput, D. O., Manongga, S. P., Muntasir, Prinata, E., Senudin, K. P., & Nanur, N. F. (2021). Factors predicting of the Implant Contraceptive Used as Family Planning Method among Mothers in Wae Mbeleng Public Health Center , Ruteng Sub District. *International Journal of Nursing and Health Service*, *4*(1), 97–111. doi : http://doi.org.10.35654/ijnhs.v4i1.367

Linet, T., Lévy-Bachelot, L., Farge, G., Crespi, S., Yang, J. Z., Robert, J., & Fabron, C. (2021). Real-world cost-effectiveness of etonogestrel implants compared to long-term and short term reversible contraceptive methods in France. *The European Journal of Contraception & Reproductive Health Care*, *26*(4), 303–311. doi: https://doi.org/10.1080/13625187.2021.1900562

López del Cerro, E., Serrano Diana, C., Castillo Cañadas, A. M., González Mirasol, E., García Santos, F., Gómez García, M. T., & González de Merlo, G. (2018). Influence of age on tolerability, safety and effectiveness of subdermal contraceptive implants. *Journal of Obstetrics and Gynaecology*, *38*(7), 979–984. doi: https://doi.org/10.1080/01443615.2018.1430753

Mardiyono, Sukamto, Mayliawati, A., Kurniawan, U., & Kiswahono, A. D. (2020). Optimalisasi pelayanan KB IUD dan implant melalui pelatihan contraceptive technology update bidan. *Cakrawala: Jurnal Litbang Kebijakan*, *14*(2), 129–138. https://doi.org/10.32781/cakrawala.v14i2.326

Ndari, W. W., Dharminto, D., & Nugroho, D. (2016). Hubungan tingkat kemandirian dan kualitas pelayanan KB dengan level kepuasan akseptor KB implan di Puskesmas Pudak Payung Kota Semarang triwulan I tahun 2016. *Jurnal Kesehatan Masyarakat*, *4*(3), 26-35. doi: https://doi.org/10.14710/jkm.v4i3.12788

Nuraini, N., Aisyah, S., & Indriani, P. L. N. (2021). Hubungan Paritas, Biaya dan Pendidikan dengan KB Implant. *Jurnal Ilmiah Universitas Batanghari Jambi*, *21*(1), 382-386. doi: https://doi.org/10.33087/jiubj.v21i1.1205

Odom, E. B., Eisenberg, D. L., & Fox, I. K. (2017). Difficult removal of subdermal contraceptive implants: a multidisciplinary approach involving a peripheral nerve expert. *Contraception*, *96*(2), 89–95. doi: https://doi.org/10.1016/j.contraception.2017.05.001

Odwe, G., Obare, F., Machiyama, K., & Cleland, J. (2020). Which contraceptive side effects matter most? Evidence from current and past users of injectables and implants in Western Kenya. *Contraception*, *X* (2), 1-6. doi: https://doi.org/10.1016/j.conx.2020.100030

Osman, I. R. (2020). Pengaruh Kenyamanan, Kemudahan, Brand Equity, Dan Shared Value Terhadap Kepuasan Pegguna E Chanel Pada Bank Central Asia Periode Tahun 2015–2019. *Jurnal IKRA-ITH Ekonomika*, *3*(3), 84-93. doi: https://doi.org/10.37817/ikraith-ekonomika.v3i3.1042

Owen, D. H., Jenkins, D., Cancel, A., Carter, E., Dorflinger, L., Spieler, J., & Steiner, M. J. (2013). Development and implementation of a quality assurance program for a hormonal contraceptive implant. *Contraception*, *87*(4), 473–479. doi: https://doi.org/10.1016/j.contraception.2012.07.010

Rahayu, S., & Ulfah, S. (2016). Hubungan lama pemakaian KB implan dengan siklus menstruasi di wilayah kerja Puskesmas Rowosari 02 Kabupaten Kendal. *Jurnal Kebidanan*, *5*(2), 82-87. doi: https://doi.org/10.26714/jk.5.2.2016.82-87

Rocca, M. L., Palumbo, A. R., Visconti, F., & Di Carlo, C. (2021). Safety and benefits of contraceptives implants: a systematic review. In *Pharmaceuticals* (Vol. 14, Issue 6). doi: https://doi.org/10.3390/ph14060548

Romano, M. E., & Braun-Courville, D. K. (2019). Assessing weight status in adolescent and young adult users of the etonogestrel contraceptive implant. *Journal of Pediatric and Adolescent Gynecology*, *32*(4), 409–414. doi: https://doi.org/10.1016/j.jpag.2019.03.008

Samir, V. F., Sampurno, S., & Derriawan, D. (2021). The Effect of Product Quality on Customer′s Satisfaction and Loyalty of EMN Brand in the Ecommerce Era. *The International Journal*

of Business Review (The Jobs Review), 4(1), 1–14. doi: https://doi.org/10.17509/tjr.v4i1.33378

Sanders, J. N., Higgins, J. A., Adkins, D. E., Stoddard, G. J., Gawron, L. M., & Turok, D. K. (2018). The impact of sexual satisfaction, functioning, and perceived contraceptive effects on sex life on IUD and implant continuation at 1 year. Women's health issues : official publication of the Jacobs Institute of Women's Health, 28(5), 401–407. doi: https://doi.org/10.1016/j.whi.2018.06.003

Setiati, N. W., Nurasiah, A., & Yuliani, I. (2021). Hubungan antara pelayanan KB implan dengan tingkat kepuasan akseptor KB implan di wilayah kerja Puskesmas Mandirancan Kabupaten Kuningan. Journal of Midwifery Care, 1(02), 98–108. doi: https://doi.org/10.34305/jmc.v1i02.255

Steiner, M. J., Boler, T., Obhai, G., & Hubacher, D. (2010). Assessment of a disposable trocar for insertion of contraceptive implants. Contraception, 81(2), 140–142. doi: https://doi.org/10.1016/j.contraception.2009.08.006

Sudjana. (2020). Desain kemasan produk (analisis perbandingan: efektivitas pelindungan desain industri atau merek). ECODEMICA: Jurnal Ekonomi, Manajemen dan Bisnis, 4(1), 117-126. doi: https://doi.org/10.31294/jeco.v4i1.7342

Talikadze, N., & Kharaishvili, E. (2022). "Competitiveness characteristics of agri-food products – what does the consumer choose? (Case of Georgia)." Innovative Marketing, 18(1), 195–207. doi: https://doi.org/10.21511/im.18(1).2022.16

Taufik, A., Santoso, S., Fahmi, M. I., Restuanto, F., & Yamin, S. (2022). The role of service and product quality on customer loyalty. Journal of Consumer Sciences, 7(1), 68–82. doi: https://doi.org/10.29244/jcs.7.1.68-82

Titaley, C. R., Wijayanti, R. U., Damayanti, R., Setiawan, A. D., Dadun, Dachlia, D., Siagian, F., Suparno, H., Saputri, D. A. Y., Harlan, S., Wahyuningrum, Y., & Storey, D. (2017). Increasing the uptake of long-acting and permanent methods of family planning: A qualitative study with village midwives in East Java and Nusa Tenggara Barat Provinces, Indonesia. Midwifery, 53 (1), 55–62. doi: https://doi.org/10.1016/j.midw.2017.07.014

Weisberg, E., Bateson, D., McGeechan, K., & Mohapatra, L. (2014). A three-year comparative study of continuation rates, bleeding patterns and satisfaction in Australian women using a subdermal contraceptive implant or progestogen releasing-intrauterine system. The European Journal of Contraception & Reproductive Health Care, 19(1), 5–14. doi: https://doi.org/10.3109/13625187.2013.853034