



Original Article

The Influence of Customer Factors (Preferences, Desires-Demand) on Antenatal Care Services and Delivery Places in Balikpapan City

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ABSTRACT

Maternal and infant mortality rates remain high in Indonesia, necessitating improvements in health services, particularly for pregnant women. This study aimed to determine the influence of customer factors (preferences, desires, and demands) on antenatal care services and delivery place. A cross-sectional survey was conducted with a sample of 210 mothers who had given birth in Balikpapan City, selected using multistage random sampling. Data were collected using questionnaires and analyzed descriptively, examining relationships between variables and using Partial Least Square (PLS) analysis. Results showed that customer factors significantly influenced antenatal care services (coefficient=0.454, $t>t$ -table) and choice of delivery location (coefficient=0.434, $t>t$ -table). Preferences for antenatal care were highest for independent midwives (35.2%) and hospitals (35.2%), while desires for delivery location were highest for hospitals (57.2%). The majority of respondents (73.7%) had their first antenatal check-up in the first trimester, and 76.2% had more than four check-ups. The most common delivery locations were hospitals (46.7%) and health centers (38.1%). In conclusion, an increase in customer factors (preferences, desires, and demands) was found to increase antenatal care service utilization by 45.4% and influence the choice of delivery location by 43.4%.



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INTRODUCTION

The maternal and infant mortality rate in Indonesia is still quite high, where improvements are needed in the provision of health services, especially for pregnant women, such as the utilization of health services for pregnant women and the selection of places to give birth. AKI in Indonesia recorded at 189 per 100,000 live births.¹ To reduce maternal and infant mortality rates, the Ministry of Health instructs that pregnant women must give birth in health facilities who reduce and reduce mortality rates for both mothers and babies.² The high maternal mortality rate is caused by hypertension in pregnancy as many as 801 cases, bleeding as many as 741 cases and heart disease as many as 232 cases.³

The level of utilization of health service facilities in health workers by pregnant women shows how good the quality of health services provided by health service workers is and also shows the level of trust of pregnant women in the provision of health services. The utilization of health services in 2022 decreased by 86.2% according to the Ministry of Health, among other things due to access and quality of services that need to be improved.⁴

The coverage of antenatal care utilization by health workers in Indonesia is 88.13% and this figure decreases when childbirth occurs, where mothers who check their pregnancy with health workers do not give birth at a health service facility. According to Indonesian Ministry of Health stated that more than 50% of delivery coverage in health facilities had not reached the specified target of 89%⁵. The research results revealed by Allan, 2018 said the lack of coordination between health workers in antenatal care facilities causes pregnant women to feel that integrated antenatal services are inadequate and do not satisfy pregnant women who want continuous antenatal care.⁶

Research conducted by Zahrotunnisa and Ratnaningsih, 2023 said that as many as 30% of pregnant women felt dissatisfied with antenatal services. To increase the coverage and quality of services for pregnant women, it is deemed necessary to improve the quality of services in terms of what is felt to be unsatisfactory for pregnant women in carrying out their pregnancy checks⁷. Pregnant women can be categorized as external customers.⁸ Customers, in addition to having needs and desires, also have expectations which are prerequisites for improving quality and achieving customer satisfaction⁹, so we as *providers* are required to understand customers.

The utilization of antenatal care by pregnant women in Indonesia is still low¹⁰, the utilization of antenatal care by health workers is only 66% and this figure decreases when labor occurs, where mothers who check their pregnancy with health workers do not give birth in health facilities, which is 46%.¹¹ The government dares to provide guarantees as an effort to reduce AKI dan AKB in Indonesia by providing facilities in health services such as easy access to health service locations, guaranteed service facilities, qualified health resources and safe labor where mothers giving birth are assisted by health workers at delivery service locations, both hospitals, independent midwives, or health centers.¹²

The Ministry of Health instructs to give birth in health facilities because of the ready helpers and complete equipment, if at any time there is an abnormality or complication of labor where emergency assistance is needed.¹³ The Health Center is the leading health service unit in the community that is ready to provide basic emergency obstetric and neonatal services (PONED) that can handle the referral system immediately.¹⁴ This study aimed to determine the influence of customer factors (preferences, desires, and demands) on antenatal care services and delivery place.

METHODS

This type of research is a survey-research, with a cross-sectional study design, the independent variables are customer factors: preferences, desires and demands, while the dependent variables are antenatal care services, and place of delivery. With the aim of determining the influence of customer factors (preferences, desires-demands) on antenatal care services and places of delivery. Researchers used a questionnaire sheet. The questionnaire for customer factor variables: preferences, variables of desires, demands used a Likert scale with answer choices: traditional healers, private midwives, health centers, and hospitals. While the questionnaire for dependent variables: antenatal care services and places of delivery used multiple choice with 4-5 options. The population in this study were mothers who had babies in Balikpapan City with a sample of 210 people. The sampling technique was carried out by Multistage Random Sampling. Randomize 6 sub-districts by taking 3 sub-districts, and draw a number of sub-districts from the 3 selected sub-districts, 3 sub-districts each, and draw a number of RTs from 3 sub-districts with a large RT (30 RTs). RT is the smallest sample unit and the sample size is drawn proportionally. Data analysis was carried out descriptively, the relationship between variables and PLS (Partial Least Square) analysis.

RESULTS

Table 1. Frequency Distribution of Respondents Based on Customer Factors: Frequency and Desire Request Place of birth

Frequency	n	Percentage (%)
Traditional Healer	1	0.5
Integrated Health Post	4	2.0
Independent Midwife Practice	74	35.2
Health Center	62	29.5
Hospital	74	35.2
Desire Request Place of Birth		
Independent Midwife Practice	69	32.8
Health Center	21	10.0
Hospital	120	57.2

Table 1 shows that customer factors: the mother's preferences or preferences in antenatal care services are mostly found in the choice of independent midwives, as many as 74 people (35.2%), and hospitals as many as 74 people (35.2) and only 1 person (0.5%) checked their pregnancy with a traditional healer, the rest checked their pregnancy at integrated health posts and community health centers, as many as 66 people (31.4%). In Desire The highest demand for antenatal care services is in the choice of hospitals with 120 people (57.2%), while the smallest is in health centers with 21 people (10.0%).

Table 2. Frequency Distribution of Respondents Based on Antenatal Care Services and Place of Delivery

Antenatal Care Services	n	Percentage (%)
First Time Pregnancy Check Age		
Trimester I	154	73.3
Trimester II	47	22.4
Trimester III	9	4.3
Pregnancy Check Frequency		
< 4 times	22	10.5
4 times	28	13.3
> 4 times	160	76.2
Pregnancy Check Places		
Independent Midwife Practice	69	32.9
Health Center	61	29.0
Hospital	7	22.4
Doctor's Practice	33	15.7
Check Standard		
Complete	177	84.3
Incomplete	33	15.7
Place of Delivery		
Health Center	80	38.1
Independent Midwife Practice	32	15.2
Hospital	98	46.7

Table 2 shows that the Age of First Pregnancy Check-up at Antenatal Care Services was highest in Trimester I with 154 people (73.7%) and only 9 people (4.3%) in Trimester III. The highest frequency of Pregnancy Check-ups was >4 times with 160 people (76.2%) and 22 people (10.5%) who checked their pregnancy <4 times. The highest place for Pregnancy Check-ups was at Independent Midwife Practices 69 (32.9) and at doctor's practices 33 (15.7%). The standard for pregnancy check-ups was 177 (84.3%) with complete check-up standards. That the most frequent place of delivery was in hospitals with 98 people (46.7%) and the Independent Midwife Practice was the place of delivery visited by the least number of respondents, 32 (15.2%).

Table 3. Distribution of Influence of Customer Factors: Frequency, Demand Desire and Antenatal Care Services

Criteria	Antenatal Care Services							
	Independent Midwife		Integrated Health		Hospital		Medical Specialis	
	n	%	n	%	n	%	n	%
Frequencies:								
Integrated Health Post	1	20.0	2	50.0	1	10.0	1	20.0
Independent Midwives	12	16.2	46	62.2	9	12.2	7	9.5
Health Center	50	80.6	5	8.1	5	8.1	2	3.2
Hospital	6	8.7	8	11.6	32	46.4	23	33.3
Request Wish:								
Place of birth in Independent Midwifery	19	28.8	37	56.1	6	9.1	4	6.1
Health Center	16	76.2	3	14.3	2	9.5	0	0
Hospital	34	28.3	19	15.8	38	31.7	29	24.2

Table 3 shows that as many as 62 people or 29.5% of respondents who have a preference for the Health Center, tend to use Independent Midwife Practice as a place to check pregnancy as many as 50 (80.6%), there is 1 person (20.0%) who goes to the hospital and 1 person (20.0%) to a specialist doctor. Desire Request: Place of birth in the hospital tends to utilize Antenatal Care Services in the hospital as many as 38 people (31.7%), and as many as 34 people (28.3%) Desire Request: Place of birth in the hospital utilizes Antenatal Care Services at Independent Midwife Practice and as many as 19 people (15.8%) at the Health Center.

Table 4. Distribution of Influence of Customer Factors: Frequency, Demand Desire and Place of Delivery

Criteria	Place of delivery							
	At home		Independent Midwife		Integrated Health		Hospital	
	n	%	n	%	n	%	n	%
Preference:								
Integrated Health Post	0	0	1	50.0	0	0	1	50.0
Independent Midwife	2	2.7	36	51.4	10	10.8	19	35.1
Health Centre	4	6.5	21	35.5	10	14.5	30	43.5
Hospital	2	2.9	22	26.1	4	10.1	47	60.9
Request Wish:								
Place of birth in Independent Midwifery	2	3	47	71.2	8	12.1	9	13.6
Health Centre	2	9.5	10	42.9	2	9.5	8	38.1
Hospital	3	2.5	23	19.2	14	10.8	81	67.5

Table 4 shows that as many as 75 people or 35.5% of respondents who have a preference for Hospitals, the most choose hospitals as a place to give birth as many as 47 (60.9%), but as many as 22 (26.1%) choose a place to give birth at the Health Center. As many as 67 people (32.0%) of mothers who have a preference for Independent Midwife Practice choose a health center as a place to give birth as many as 36 people (51.4%). Of the 65 people (31.0%) with a preference: health centers as many as 30 people (43.5%) choose a hospital as a place to give birth. As many as 120 people (57.1%) who have a Desire Request for Place of Birth, it turns out that 81 people (67.5%) want to give birth in a hospital, as many as 66 people (31.4%) have a Desire Request for Place of Birth at Independent Midwife Practice choose a Health Center as a place of birth as many as 47 people (71.2%).

Table 5. Inner Weight Test on Utilization of Antenatal Care (ANC) Services and Place of Delivery with Bootstrap Samples

Influence	Coef Original	Bootstrap B = 100		
		Coef	T-test	Information
Customer Factors > ANC	0.367	0.454	3.979	Sig
Customer Factors > Maternity Place	0.364	0.434	2.342	Sig

In table 5 This hypothesis testing is based on research data processing using Smart PLS. Based on the information in table 7 above, the hypothesis testing can be described as follows: Customer factors : preferences, desires and demands, are proven to have a positive and significant influence on the Utilization of Antenatal Care Services. The results of the study prove that the path coefficient is 0.454 with t-statistics = 3.979 greater than the t-table value. Thus, customer factors have a direct influence on the Utilization of *Antenatal Care Services* by 0.454, which means that every increase in customer factors: preferences, desires and demands , will increase *Antenatal Care Services* by 45.4%. Customer factors: preferences, desires and demands have a positive and significant effect on the choice of place of delivery. The results of the study prove that the path coefficient is 0.434 with a t-statistic value of 2.342 which is greater than the t-table, so it means that customer factors have a direct effect on the choice of place of delivery by 0.434 which means that every increase in customer factors: preferences, desires and demands , will increase the choice of place of delivery by 43.4%.

DISCUSSION

Preference

Mother's preference or choice and preference for a product, in this case utilizing antenatal care is the mother's and family's preference for checking their pregnancy with alternative choices of pregnancy check-up places at traditional healers, independent midwife practice, Community Health Centers, Hospitals, specialist doctor's practices. The results of this study indicate that there is a significant relationship between customer factors: preferences, desires and demands with a strong relationship strength. Preferences contribute 65% to the utilization of antenatal care. Respondents who have a preference for service locations such as hospitals consistently use hospitals and specialist doctors' practices as places for pregnancy check-ups, and mothers who have a preference for pregnancy check-ups with midwives consistently check their pregnancies at community health centers and BPS as places for pregnancy check-ups.

The results of this study are in line with research conducted by¹⁵ which stated that mothers' preferences for undergoing prenatal check-ups are supported by several factors such as access factors, geographical conditions, for example the location of health services close to home, easy transportation, and the distance to health services is not too long. The most common preference for mothers to have their pregnancies checked is at an independent midwife practice, then at a community health center. Pregnant women who have their pregnancies checked at an independent midwife practice say that the midwife practice collaborates with obstetricians and gynecologists to have quite sophisticated equipment such as three dimensi ultrasound, have a sophisticated fetal heart detector (Doppler) and the costs are not too expensive. This is in line with the results of a study¹⁶ which states that health facilities affect the utilization of health services, with complete service facilities available at the community health center, the more people use health services, conversely if the service facilities are lacking, the fewer people visit the service location.

The preference in choosing the place of delivery is mostly in the hospital. The reason respondents chose to give birth in a hospital is because there are many hospitals in the city where the respondents live so that respondents are free to choose which hospital to go to, besides that the hospital already has complete facilities and equipment. The community already understands how important it is to maintain health and give birth in health facilities such as hospitals,

independent midwives, and health centers, Nanlohi in his research also said that knowledge greatly influences pregnant women in choosing a good place to give birth, as well as Manuaba, 2016 said that pregnant women with low knowledge tend to choose a bad place to give birth¹⁷. The distance of the house greatly affects the mother in choosing a place of delivery, the mother will choose a place of delivery that can be easily reached and with complete facilities and infrastructure. The higher the mother's education, the higher the knowledge, with a high education, the mother will choose a place of delivery assistance that meets health requirements.¹⁸ This is in accordance with the recommendation of the Ministry of Health that childbirth must be carried out in health care facilities.² Many respondents choose hospitals as a place of delivery because the equipment in the hospital is complete if needed.¹⁵

Demand-Desire

Demand desire is the belief held by respondents before trying to use an antenatal service which is then used as a standard of comparison to evaluate the quality or satisfaction of respondents with the antenatal service¹⁹. Respondents have dynamic and individual demand desires for antenatal and delivery service locations. Satisfaction of service recipients is achieved when the service is in accordance with what is needed and expected²⁰. The results of the study showed that the demand desires of respondents to make antenatal service visits that then had a significant relationship with the place of pregnancy examination with a strong relationship strength. Demand desires contributed 0.488% to the place of antenatal service

Respondents' requests for places to check their pregnancy varied greatly. Respondents stated that their requests for places to provide antenatal care were independent midwives, community health centers and hospitals. and specialist doctors as a place for antenatal services, pregnant women have requests about antenatal service places at the Community Health Center but use antenatal services at Independent Midwives, as many as 46 people (62.2%) said that they prefer to go to Independent Midwives because they have more freedom to convey complaints related to their pregnancy, have more time and feel relaxed.

The results of other studies by²¹ state that facilities and infrastructure greatly support the desire of pregnant women to utilize antenatal services at health centers, the more complete the facilities and infrastructure at the health center, the greater the chance that pregnant women will visit, such as the results of research from Mulyati, 2023 stating that complete facilities and infrastructure have a 3,611 times chance of a complete antenatal care visit, compared to incomplete facilities and infrastructure ²².

The respondents' requests for the most places of delivery were in hospitals, then in health centers and there were still those who chose to give birth at home. The results of research from Harahap, 2021 stated that respondents who had good knowledge mostly chose to give birth in health facilities. In addition to knowledge that influences respondents to choose a place of delivery, there are other factors, namely social material support and family support ²³. According²⁴, husbands and families play a major role in suggesting to give birth at home or non-health facilities. Husband's support and support from family are guidelines and must be followed so that they become considerations for mothers in choosing a place of delivery. The results of research from ²⁵ stated that income has a *significant effect* on the choice of place of delivery, a person's socio-economic level can be seen from income, the higher the respondent's income, the higher the interest in choosing a paid place of delivery. Efforts from the government, especially health workers and the community, are very important to continue to be carried out to increase the knowledge of pregnant women and instill awareness to give birth in health facilities.

CONCLUSION

Based on the research results, it can be concluded that the results of the *Inner Weight* test on *Antenatal Care (ANC) Services and Delivery Places* with Bootstrap Samples show that there is a positive and significant influence of customer factors : preferences, desires and demands, on Antenatal services with a path coefficient of 0.454 with a t-statistic = 3.979 which is greater than the t-table value. means that every increase in customer factors: preferences, desires and requests

, will increase *Antenatal Care services* by 42.4%. There is a positive and significant influence of customer factors : preferences, desires and requests, on the choice of place of delivery, the path coefficient is 0.434 with a t-statistic value of 2.342 which is greater than the t-table, so it means that customer factors have a direct effect on the choice of place of delivery by 0.434, meaning that every increase in customer factors: preferences, desires and requests , will increase the choice of place of delivery by 43.4%.

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