



# Analysis of Various Factors Associated with Antenatal Care Visits

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**Abstract:** Antenatal care is a service provided to pregnant women from conception to the beginning of childbirth in accordance with antenatal service standards. The purpose of this study is to identify predisposing factors (knowledge and attitudes), social capital (social capital) and geographical factors (mileage, location, travel time, transportation path and cost). This study uses a survey method or descriptive correlation with a cross sectional approach. With a total sample of 85 respondents with a simple random sampling technique. Research instruments using questionnaires and data analysis techniques to achieve linear regression to see simultaneously related factors. From the results of the study, it was found that there was a relationship between predisposing factors; knowledge (p value  $0.000 < 0.005$ ) and attitude (p value  $0.000 < 0.005$ ) with antenatal care visits. The existence of a relationship between social factors of capital; Trust (P Value  $0.026 < 0.005$ ), Reciprocity (P Value  $0.019 < 0.005$ ), NormA (P Value  $0.009 < 0.005$ ) With Antenatal Care Visits. The existence of a relationship between geographical factors; mileage (p value  $0.947 > 0.005$ ), location (p value  $0.043 < 0.005$ ), travel time (p value  $0.272 > 0.005$ ), transportation path (p value  $0.977 > 0.005$ ) and cost (p value  $0.021 < 0.005$ ) with antenatal care visits. The most dominant factor in the relationship with antenatal care visits is the level of knowledge and attitude with an equation level of  $p=0.52$  (52%).

**Keywords:** Geographical; Predisposition; Social capital

## Introduction

Adequate monitoring and health care during pregnancy to puerperium can help the survival of the mother and baby (Widström et al., 2019). Apart from that, various conditions that may affect the survival of the mother and baby are death. From the results of the 2017 Indonesian Demographic and Health Survey. Results Survey, it shows that AKB is 24 per 1,000 live births, and AKABA is 32 per 1,000 live births (Nnodu et al., 2021). The Mortality Rate of Toddlers has reached the 2030 Sustainable Development Target (SDGs) of 25/1,000 live births (McArthur et al., 2018).

The high maternal mortality rate in Indonesia is related to the low quality of various programs in an effort to reduce MMR implemented by the government such as Safe Motherhood which is known for its 4 pillars, namely family planning, antenatal care, safe childbirth,

and essential obstetric services (Shiferaw et al., 2020). Of these four things, antenatal services have an important role in preventing possible obstetric complications or pregnancy (Metz et al., 2022). Antenatal care is a service provided to pregnant women from conception to the beginning of childbirth in accordance with antenatal service standards, namely by fostering a trusting relationship with the mother, detecting life-threatening complications, preparing for birth, and providing education (Sharma et al., 2019).

In Indonesia, the coverage of health services for pregnant women (K1 and K4) in 2018 has not fully reached the target of the Ministry of Health's Strategic Plan (K1=100%, K4=78%) with an achievement rate of K1 of 96.5% and K4 of 88.03%. In addition, there are 9 provinces that have really not reached the target and one of them is East Nusa Tenggara Province with K1 of 60.15% and K4 of 52.01%. In 2018, the coverage of

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pregnant women's visits according to regencies/cities in NTT Province, it was found that Alor Regency ranks highest at 100% and the lowest is found in Sabu Raijua Regency, namely K1 at 62% and K4 at 58% and East Sumba Regency with K1 at 64% and K4 at 59% (Pekabanda et al., 2018).

In East Flores Regency, in continuing the MCH revolution towards health services for pregnant women, antenatal care visit data in 2014 has not been so significant (M. N. Khan et al., 2020). From the results of the annual report of pregnancy check-up visits in the Waiklibang Puskesmas area, in 2013 the overall results of K1 visits to health facilities were 90.1%, while K4 was 64.3%. In 2014 the visits (K1) of pregnant women were 274 (100%), while the visits (K4) of pregnant women were 184 (66.8%). The decrease in K4 is one of the causes by the mobilization of the number of pregnant women out of the village to carry out examinations to the city so that it has decreased (S. Khan et al., 2018).

ANC activities are included in disease prevention behaviors carried out by pregnant women in order to prevent various diseases and dangers of pregnancy. Influenced by three main factors, namely predisposing factors, enabling factors and reinforcing factors (Imelda et al., 2022). Predisposing factors consist of knowledge, attitudes, beliefs, values and so on. Factors that support a person/individual to behave as expected include the necessary training, factors such as the workplace, transportation tools, work guidelines and so on (Hiselius et al., 2021). Meanwhile, factors that strengthen individuals to behave positively are leadership support, co-worker support, community support, government support and so on (Alnazly et al., 2021).

The role of the environment and social dynamics is also seen as one of the factors capable of making a major contribution to public health (Al-Dmour et al., 2020). Social capital as one of the social aspects is the sociological foundation of society that is able to facilitate the community to work together and interact in an effort to obtain mutual benefits (Kilpatrick et al., 2021). This social capital reflects the loyalty shown through how people respond to externalities from outside their communities. Social ties are one of the manifestations of social capital (You et al., 2019). People who have high social capital tend to have many local friends who can be trusted to help them when needed, either by request or spontaneous action. Trust is another form of manifestation of social capital (Jakola et al., 2018).

Based on the description above, the author is interested in researching the analysis of various factors related to antenatal care (ANC) visits at the Waiklibang Health Center, East Flores Regency (Liwu et al., 2022).

The objectives of this study are to 1) Identify predisposing factors (knowledge and attitudes), social capital (social capital) and physical environment (mileage, location, travel time, transportation path and cost), 2) Analyze the relationship of predisposing factors (knowledge and attitudes) with antenatal care visits, 3) Analyze the relationship of social capital factors (trust, reciprocity (joint actions that respond to each other), norm a (applicable social order/institution) with antenatal care visits, 4) Analyze the relationship of environment/access to services (mileage, location, travel time, transportation path and cost) with antenatal care visits, 5) Know the most dominant factors in the relationship with antenatal care visits (Ganle et al., 2019).

## Method

The type of research used is a survey method with a cross sectional case design. This research was conducted in the working area of the Waiklibang Health Center, Waiklibang District, East Flores Regency. The population is all pregnant women in the Puskesmas amounting to 184 people (Lumongga et al., 2020).

The sample in this study was 85 people. Sampling used simple random sampling technique to achieve this sampling, each element was randomly selected Registering pregnant women who made an ANC visit (K4) and after being registered, simple random sampling was carried out. The data that have been collected are analyzed univariately using bivariate frequency distribution using chi-square ( $\chi^2$ ) and multivariate statistical tests using multiple logistic regression using statistical analysis programs Research design and method should be clearly defined (Roberts et al., 2019).

## Result and Discussion

Waiklibang Health Center is located in Ratulodong Village, Tanjung Bunga District, East Flores Regency. Tanjung Bunga Subdistrict is located around the coastline and has the following regional boundaries: The East is bordered by the Flores Sea, the West is bordered by the Flores Sea, the North is adjacent to the Flores Sea and the South is bordered by the Lewolema District. The area of Puskesmas waiklibang: 303.34 km<sup>2</sup>, with a total of 16 villages with details of 10 villages located around the coastline and 6 other villages located on high flats (Gurran et al., 2020).

Table 1 showed that the respondents in this study were the most aged 19-24 years (31%), the most education level SD 28 respondents (33%), the most maternal work as Housewives (IRT) 73 respondents (86%) and the most income Rp.50,000-500,000 72 respondents (85%) (Tan et al., 2021).

**Table 1.** Distribution of Respondents by Age, Level of Education, Employment and Income

Variable	Sum	Percentage (%)
Age:		
<25	26	31.00
30-35	25	29.00
>35	34	40.00
Sum	85	100.00
Education:		
No School	5	6
Elementary	28	33
SLTP	18	21
High School	20	23.5
College	14	16.47
Sum	85	100
Work:		
IRT	73	86
Private	6	7
PNS	6	7
Sum	85	100
Earnings		
Rp50.000-500.000,00	72	85
Rp600.000-1.000.000,00	4	5
Rp.1.500.000,00-2.000.000,00	6	7
>IDR 2,000,000.00	3	3
Sum	85	100

**Table 2.** Relationship between Predisposing Factors, Social Capital and Geographical Factors with ANC

Factor	Category ANC				Total		Asymp.Sig. (2-sided)
	Not Good Enough		Good		N	%	
Predisposing	N	%	N	%	N	%	
Knowledge							
Not Good Enough	11	44	14	56	25	100	0.000
Good	2	3.3	58	96.7	60	100	
Total	13	15.3	72	84.7	85	100%	
Attitude							
Not Good Enough	11	34.4	21	65.6	25	100	0.000
Good	2	3.8	51	96.2	60	100	
Total	13	15.3	72	84.7	85	100%	
Factor							Asymp.Sig. (2-sided)
Social Capital							
Belief							0.026
Not Good Enough	9	25.7	26	74.3	35	100	
Good	4	8.0	46	92.0	50	100	
Total	13	15.3	72	84.7	85	100	
Norm							
Not Good Enough	8	30.8	18	69.2	26	100	0.009
Good	5	8,5	54	91.5	59	100	
Total	13	15.3	72	84.7	85	100	
Reciprocity							
Not Good Enough	9	10.6	25	29.4	34	40,0	0.019
Good	4	4.7	47	55.3	51	60,0	
Total	13	15.3	72	84.7	85	100	
Factor							Asymp.Sig. (2-sided)
Milieu							
Distance							
Nearby (<5KM)	8	15.1	45	84.9	53	100	0.947
Far (>5KM)	5	15.6	27	84.4	32	100	

Factor	Category ANC				Total		Asymp.Sig. (2-sided)
	Not Good Enough		Good				
	N	%	N	%	N	%	
Predisposing							
Total	13	15.3	72	84.7	85	100	
Vehicle Type							
Ojek Motorcycle	8	15.4	44	84.6	52	100	0.977
Bemo	5	15.2	28	84.8	33	100	
Total	13	15.3	72	84.7	85	100	
Travel time length							
Short (<60min)	9	19.1	38	80.9	47	100	0.272
Old (>60min)	4	10.5	34	89.5	38	100	
Total	13	15.3	72	84.7	85	100	
Road Conditions							
Hardening	12	1,2	46	30,6	58	100	0.043
Good	1	14,1	26	54.1	27	100	
Total	13	15,3	72	84.7	85	100	
Cost trip							
Cheap (<Rp.15.000)	2	5.3	36	94.7	38	100	0.021
Expensive (>Rp.15.000)	11	23.4	36	76.6	47	100	
Total	13	15.3	72	84.7	85	100	

The results of the analysis in table 2. Mpointed out that the variables that are risk factors for anc visits in the waiklibang health center work area , knowledge (p-value 0.000), attitude (p-value 0.000), value trust factor (p-value 0.026 ) , social institution factor/norm value (p-value 0.009), reciprocity factor value (p-value 0.0 19), distance factor p-value value 0.036, vehicle type factor value (p-value 0.048), factor length of travel value (p-value 0.026), road condition factor Value (p-value 0.043), travel cost factor value (p-value 0.021).

**Table 3.** Multivariate Analysis

Variable	B	Sig (p)	Exp(B)	95% CI	
				Lower	Upper
Knowledge	-3.090	0.001	0.046	0.007	0.295
Attitude	-2.668	0.005	0.069	0.011	0.448

The results of the multivariate analysis on table 3 shows the results of multiple logistic regression tests from "variables in the Equation" obtained that the variables that signifikan are Knowledge p-value = 0.0 01, with the value Exp (B) = 0.046) and Attitude p-value = 0.005, with the value Exp (B) = 0.069.

$$P = \frac{1}{1 + e^{5,638-3,090(\text{pronunciation})-2,668(\text{attitude})}}$$

*Predisposing Factors (Knowledge and Attitudes) with ANC Visits*

The results of the study in Table 2, showed that, 60 (70.6%) respondents had good knowledge to make an ANC visit. The results of the statistical test obtained a value of p = 0.000, so it can be concluded that there is a relationship between the knowledge factor of pregnant women and regular ANC visits during pregnancy.

Table 2 shows that 53 (62.4%) respondents had a good attitude in making regular ANC visits during

pregnancy. The results of the statistical test obtained a value of p = 0.000, so it was stated that there was a relationship between the attitude factor of pregnant women and the low number of regular ANC visits during pregnancy (Jardine et al., 2021).

Good knowledge of pregnant women is aimed at answering questions about visits in quarter -2 at least 1 time and understanding of the ANC which is 60 (70.6%). The results of this study are in line with Titis Purboningsih's research on the relationship of pregnant women's knowledge about ANC (antenatal care) to the behavior of ANC (antenatal care) visits in 2014, showing that the majority of pregnant women's knowledge levels about ANC are in the good category, namely 45 (69.2%) respondents. These results relate to a good understanding of the ANC (Wahl et al., 2022).

Attitude factors influence decision making. One of them was answered in a questionnaire question that has a good attitude about a pregnant woman if she gets an abnormality or risk of having to immediately check herself at the nearest health center or to a health worker, which is 53 (62.4%) respondents. In line with research conducted by Erlina (2013) shows that the results of the spearmen test obtained a p value = 0.001, meaning that there is a meaningful relationship between the attitudes of pregnant women towards pregnancy check-up visits at the Long Inpatient Health Center. Most pregnant women have an attitude that pays attention to the health of their pregnancy by conducting regular pregnancy check-ups (Nakagawa et al., 2021).

*Influence of Social Capital Factors (Trust, Norms and Reciprocity) with ANC Visits*

The results of the study in Table 2, showed that as many as 50 (58.8%) respondents had good confidence in

making regular ANC visits during pregnancy. The results of the statistical test obtained a value of  $p = 0.026$ , so it was stated that there was a relationship between the trust factor of pregnant women and the low number of regular ANC visits during pregnancy.

The results of the study in Table 2, showed that as many as 59 (69.4%) respondents who had good confidence in making regular ANC visits during pregnancy. The results of statistical tests obtained a value of  $p = 0.009$ , so it was stated that there was a relationship between the norm factor of pregnant women and the lowest number of regular ANC visits during pregnancy.

The results of the study in Table 2 were 51 (60.0%) respondents who had good confidence in making regular ANC visits during pregnancy. The results of the statistical test obtained a value of  $p = 0.019$ , so it was stated that there was a relationship between the trust factor of pregnant women and the low number of regular ANC visits during pregnancy.

The trust of pregnant women in terms of cooperation and support from the family, that I and the fetus are in good health, amounted to 50 (58.8%) respondents. Individuals will seek treatment in health services because they are motivated by perceived vulnerability factors, perceived seriousness, and benefits received and obstacles experienced in their actions to fight the disease as well as cues or signs.

The norms that were well demonstrated in this study by a pregnant woman in holding religious values in the exit provided motivation and guidelines for the smooth running of my pregnancy checkup, while the results of the questions amounted to 59 (69.4%) respondents (Hutasoit et al., 2020; Handayani et al., 2022). Basically, the role of culture or norms on public health is in shaping, regulating and influencing the actions or activities of individuals of a social group to meet various health needs. So if this is the value of introducing us to how to behave appropriately, then the norm specifically outlines the control of behaviour to pregnant women towards their understanding in improving the status of ANC visits (Hardiani & Purwanti, 2012).

It was illustrated in this study where there was a good joint action of a pregnant woman on the advice given by the family during pregnancy, which was 51 (60%) respondents. From a research on support factors, one of which is about husband/family support, showed that statistical tests with chi-square tests obtained that the value of  $p (0.039) < \alpha(0.05)$  means that there is an influence of family support on the use of antenatal services in the Pampang Health Center Work Area (Handayani & Mubarakah, 2018).

*Influence of Physical Environmental Factors (Location, Distance, Travel Time, Cost and Transportation Line) with ANC Visits*

The results of the study in Table 2, showed that the distance of services accessed by pregnant women was more at a close distance to 60 (70.6%) respondents. The results of the static test obtained a value of  $p = 0.947$ , so it was stated that there was no relationship between the factor Distance between pregnant women and the low number of regular ANC visits during pregnancy. Generally, the geographical conditions of rural residents who are far from health centers and hospitals as a place for pregnancy checks often make it difficult for pregnant women to carry out their pregnancy checks (Mustofa, et al., 2019).

The results of the study in Table 2, showed that the type of vehicle accessed by pregnant women stated that as many as 59 (69.4%) respondents chose the type of motorcycle taxi vehicle in making an ANC visit. The results of the statistical test obtained a value of  $p = 0.048$ . The choice of transportation facilities is in line with efficiency in the use of mileage can be shortened, so that pregnant women can get maximum services.

The results of the study in Table 2, showed that the length of travel time accessed by pregnant women stated that as many as 61 (71.8%) respondents chose a short trip (<60 minutes) in making an ANC visit. The results of the statistical test obtained a value ( $p$ -value = 0.272) no relation. In this factor of travel time, it is calculated through the use of motorcycle vehicles that have a relationship with the category of vehicle type used.

The results of the study in Table 2, showed that the road conditions accessed by pregnant women stated that as many as 58 (68.2%) respondents through hardened road conditions in making regular ANC visits during pregnancy. The results of the statistical test obtained a value of  $p = 0.043$ , so it was stated that there was a relationship between the factors of road conditions of pregnant women and regular ANC visits during pregnancy.

The results of the study in Table 2, showed that the travel costs of pregnant women stated that as many as 47 respondents had low travel costs (<Rp.15,000 ) in making regular ANC visits during pregnancy. The results of the statistical test obtained a  $p$ -value = 0.021. This low cost factor is influenced by the presence of respondents who have access to a short distance from the Puskesmas center.

Affordability or access means that health services that must be achieved by the community, are not hindered by geographical circumstances. If the distance of one place is close to another, it is said that the accessibility between the two places is high. Conversely, if it is far apart, the accessibility between the two is low. If the two places have a fast travel time, it can be said that the two places have high accessibility. The cost can also indicate the level of accessibility (Dumilah, 2019).

The cost here can be a combined cost that combines time and cost as a measure for a transportation relationship. The road in this case is a land transportation infrastructure that includes all parts of the road, including complementary buildings and equipment that benefit from traffic, which are at ground level, above ground level, below ground and/or water level, and above water level, except railways, lorry roads, and cable roads in accordance with PP Number 34 of 2006 Article 1. Thus, the road is a means that is closely related to all access for pregnant women in making ANC visits.

#### *Factors Most Related to ANC Visits*

Based on the results of the study in table 3 of each variable, it can be shown that, of the two variables that are thought to have an effect on the low number of ANC visits, only on knowledge variables that give a significant B value of 3,090. This shows that pregnant women have a good knowledge of 3,090 times the low number of ANC visits in puskesmas. According to researchers, the level of knowledge is influenced by education at the level where overall the respondents are more at the elementary level.

In general, people who feel sick take advantage of health services and vice versa people who actually need health services but feel healthy do not take advantage of health services. Attitudes or beliefs regarding pregnancy services also affect the use of health services (Purba et al., 2023; Fathimi, 2019). Pregnant women who have a positive attitude/belief regarding antenatal services will take advantage of these services and vice versa, pregnant women with negative attitudes/beliefs or unsure about the benefits of antenatal services will not take advantage of these services. In doing things and sometimes a strong attitude will form a character called principle. People who have the principle to always live a healthy life, will try their best and do anything for their health, especially for the fetus and pregnant women as part of their family and life, one of which is by doing a good ANC visit (Irwan, 2020).

#### **Conclusion**

Factors that consistently influence NAC visits are knowledge ( $p=0.005$ ), attitude ( $p=0.001$ ). It is necessary to approach the government in East Flores Regency in the service of pregnancy check-ups by placing additional officers in areas that are difficult to reach, especially posyandu and the addition of health workers, especially bidan in villages.

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All written by author 1 as correspondence. However, the bibliography and conclusions were written by author 2 and the method was written by author 3.

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