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Determinants of Choice for Delivery Place among Mothers in Selected Sub-Counties, Mombasa County

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Abstract

This study aimed to identify the socio-cultural and economic factors influencing mothers' choice of delivery place in selected sub-counties of Mombasa County. A cross-sectional research design was used, targeting 297 mothers who delivered within the past 2 years and lived in Kisauni and Nyali Sub-Counties, using stratified and simple random sampling. The questionnaire was the only data-collection tool, and the study used descriptive and inferential analyses in SPSS. The study found that socio-cultural factors strongly determined delivery place. Mothers whose decisions were not determined by socio-cultural factors were 6.36 times more likely to give birth at health facilities, even after accounting for economic factors and access to health facilities. This finding reveals that financial capacity is a key determinant of access and utilization of prenatal, antenatal and postnatal health care. Additionally, mothers' decisions were influenced by indirect costs, including required delivery supplies, transportation, opportunity costs, and informal payments. Socio-cultural factors, namely family influence, cultural norms, and community expectations, strongly influenced the place of delivery even when accessible and affordable healthcare services were available. Economic factors, particularly household income and indirect costs, influenced mothers' choice of place of delivery. Cultural norms and economic constraints also drove home delivery. To address indirect costs associated with hospital deliveries, implement interventions that reduce hidden fees, provide transport vouchers, and run campaigns to increase awareness of the benefits of, access to, and use of programs like Linda Mama/SHA.

Keywords: *Socio-cultural factors, economic factors, choice of delivery place, Mombasa County*

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1. Introduction

Maternal death rates decreased globally by 38% between 2000 and 2007, according to intergovernmental estimates from the UN. As a result, many areas reported significant progress, including sub-Saharan Africa, which saw a remarkable 39 percent decrease in the maternal mortality rate during this period (WHO, UNFPA, World Bank Group and United Nations Population Division, 2019). These advancements are remarkable in a setting with rapid population increase, yet more than 800 women still pass away every day from pregnancy-related problems during pregnancy and childbirth. More than 86 percent of all deaths linked to pregnancy occur in developing countries, with 68 percent taking place in sub-Saharan Africa (WHO, 2019).

In Kenya, the stillbirth rate is 19.7 per 1,000 live births and 342/100,000 maternal death rate. These numbers are well behind the 2030 targets of 147/100,000 and 12/1,000 (NIHR, 2021; WHO, 2019, 2020). Seventy-five percent of all maternal deaths are the result of major challenges such as unsafe abortion, gestational hypertension and delivery complications. Obstacles that arise during pregnancy, labour, and delivery are to blame for these fatalities (Say *et al.,* 2014).

Given this, reducing maternal mortality remains a global health priority. The Sustainable Development Goal 3 target is therefore set to reduce the maternal mortality ratio to 70/100,000 live births by 2030 (World Health Organization, 2018). Despite global efforts, existing evidence further indicates a huge disparity between developed and developing countries (Girum & Wasie, 2017), with poor resource settings reporting slower progress in achieving a reduction in maternal deaths. These disparities are partly explained by differences in access to and utilization of maternity services. For instance, utilization of prenatal and antenatal health care services is higher in middle-income settings than in low-resource settings. Even when home births, which are still common in resource-poor settings, are integrated into the public health care system as an appropriate option for potentially low-risk pregnancies, such as in countries like the Netherlands, where higher perinatal mortality rates are observed when home births are planned (Van Der Kooy *et al.,* 2017). These findings suggest that maternal and newborn outcomes may be poorer in developing nations, where most deliveries occur without guidance from trained healthcare professionals (Kifle *et al.,* 2018; Mekonnen *et al.,* 2015). Although home delivery is usually the cheapest option, for many vulnerable and disadvantaged women living in resource-poor settings, it has a high potential risk of death and infections when complications arise (Envuladu *et al.,* 2013).

Therefore, international and national efforts to improve maternal health have been initiated worldwide. The literature shows that quality health care is critical to reducing preventable deaths of children and mothers. This includes delivery by trained medical professionals and early postpartum care, which has been shown to reduce the risk of death by 75% (Damian *et al.,* 2020; Nakua *et al.,* 2015; Shiferaw *et al.,* 2013).

Kenya's national government has made significant efforts to improve maternity healthcare utilization by establishing free maternity care in all health facilities across the country. Therefore, while antenatal care utilization was reported at 96% in 2014, only 61% of these women delivered in a health facility, suggesting suboptimal utilization of maternal health services (KNBS, 2015).

Based on recent research, it is believed that a variety of variables, some of which may vary depending on the context, influence the use of maternal services, which may include giving birth in a medical institution. These variables include the mother's education, age, marital status, family size and affluence, parity, the community's socioeconomic standing, location and the accessibility to and closeness to healthcare facilities. These factors may influence mothers' choice of delivery place (Kitui *et al.,* 2013).

Despite efforts to remove barriers to underutilization of existing prenatal, perinatal, and postnatal services, progress has reportedly been slow, suggesting that up-to-date evidence is needed on the determinants of women's birthplace choice in Kenya. To increase use of current services like assisted delivery, it is crucial to establish additional policy and practice priorities (KDHS, 2015).

1.1 Problem Statement

Maternal and newborn outcomes have an impact on the choice of where to seek maternal services during labour. Similarly, giving birth in health facilities assisted by qualified midwives has been shown to reduce up to 40 percent of all maternal and infant deaths (UNFAP, 2019). The contrary is also true; therefore, this option predisposes both the mother and the infant to life-threatening situations in case complications occur during delivery.

In Kenya, recent data show that despite efforts by national and county governments, including the introduction of free delivery services to increase access to and use of maternal, antenatal, perinatal, and postnatal services, six out of ten births still take place in health institutions. According to reports, compared to rural areas, urban areas (82 percent) have the highest prevalence of these facility births, while rural areas recorded that over 60% are delivered by a skilled health provider (i.e., doctors and midwives), with about 5% of live births being delivered alone (KNBS, 2015).

Overall, recent data suggest improvement in utilization of antenatal services (96%) among women with a recent birth compared to previous years. Although, between the population-based periodic surveys, service statistics from DHIS2 showed an increase in hospital deliveries from 32.6% in 2017 to 53% in 2021, this resulted in a corresponding rise in cesarean section delivery rates from 7.6% to 9.5%, almost entirely as a result of more women delivering in health facilities. KHIS data also show an increase in skilled birth attendance and cesarean section deliveries from 14.5% in 2017 to 16.2% in 2021. This has led mothers to avoid hospital deliveries (MoH, 2021).

In 2021, Mombasa County reported that women underutilized skilled birth attendance services (54.7%), despite most having continuous access to and utilization of antenatal care (94%). Home deliveries also account for a significant number of hospital admissions among mothers due to anaemia, obstetric fistula, obstructed labour and haemorrhage. In addition, home deliveries, if not well attended to, have led to the loss of neonates and/or the mother. The study focused on Nyali and Kisauni Sub-counties because they have few skilled birth attendants (KHIS, 2024).

1.2 Research Objectives

1. To determine the socio-cultural factors that influence the choice of delivery place among mothers in selected sub-counties, Mombasa County.

2. To evaluate the economic factors that influence the choice of delivery place among mothers in selected sub-counties, Mombasa County.

2. Literature Review

2.1 Sociocultural Factors and Choice of Delivery Place

Demographic factors influence birthplace choice. Studies show that factors influencing birthplace choice include maternal age, educational level, the spouse's educational level, and marital status. For instance, it has been demonstrated that births in healthcare facilities are more likely to occur among younger mothers (Tebekaw et al., 2015; Weldearegay, 2015). Similarly, studies indicate that more educated women choose health facility delivery compared to less educated women (Ayamolowo et al., 2020; Johnson *et al.,* 2020). This may be because education and access to information (i.e., knowledge and awareness) are interlinked, as an individual's education level affects how they interpret health messages, such as the advantages of health facility deliveries.

A cross-sectional study by Adde and colleagues (Adde *et al.,* 2020) reported, using demographic data, the frequency and determinants of the place most sought for birth attendance among women from Sub-Saharan Africa. It also showed that a spouse's educational status influences birthplace choice, and a health survey conducted in 28 nations discovered that women with an educated spouse chose medical care during birth (AOR = 1.51, 95 percent CI = 1.40-1.62) compared with individuals whose partners are uneducated.

In addition to demographics, cultural factors, i.e., cultural beliefs, norms, and taboos, influence the choice of delivery place. These societal norms and beliefs are often reflected in individual health-oriented behaviours, which are often shaped by the individual's social environment (Stephenson *et al.,* 2006). Maasai women do not have birth plans because childbirth is a natural phenomenon; therefore, making birth plans is considered taboo (Karanja *et al.,* 2018). This, therefore, implies that women make decisions regarding where to deliver at the onset of labour, increasing the likelihood of home delivery.

Additionally, the literature suggests that in patriarchal communities where women lack autonomy, health service use is determined by the extent of male involvement, who often has the decision-making power (Speizer *et al.,* 2014; Karanja *et al.,* 2018). Similarly, mothers-in-law, close relatives, and birth attendants' views also affect decision-making authority (Danforth *et al.,* 2009; White *et al.,* 2013). Women's lack of autonomy reduces use of maternal health services, especially institutional delivery.

2.2 Economic Factors and Choice of Delivery Place

Studies previously conducted reveal that wealthy women are more likely than less wealthy women to give birth in medical facilities (Nuamah et al., 2019; Yaya *et al.,* 2019). This shows how healthcare costs may influence how often women give birth in health institutions. These costs include direct costs of reaching health facilities and obtaining quality care, as well as travel time costs (Dzakpasu *et al.,* 2014). In Kenya, women in the top quintile of the wealth index are more likely to receive prenatal care, antenatal care, be aware of available services, and access and use health services than those in the lower quintile (Afulani *et al.,* 2019).

The probability of mothers seeking health care has been revealed to be strongly correlated with other socioeconomic indicators, including household income, household living conditions, and occupational status, which includes both women and their husbands (Kusuma *et al.,* 2018), urban residence (Agadjanian *et al.,* 2016), and urban residence (Yaya *et al.,* 2019). As a result, educated women actively involved in economic activities are more likely to seek quality midwifery services than illiterate, unemployed women (Nuamah et al., 2019; Johnson *et al.,* 2020).

3. Methodology

This study used a cross-sectional research design because data were collected across different sub-counties in Mombasa County. The study population included mothers who delivered within the past 2 years and resided in Kisauni and Nyali Sub-Counties in Mombasa County. The study was conducted in Nyali and Kisauni Sub-Counties because the KHIS database shows these sub-counties have low-skilled birth attendants. According to the Electronic Community Health Information System 2025 database, the targeted sub-counties have 108,559 households. Thus, the study target population was 108, 559 households. The sample size for this study comprised 297 respondents.

Only quantitative data were collected, and they were double-checked and verified for errors, completeness, and consistency. This study used both descriptive and inferential statistics to analyze the data using IBM Statistical Package for the Social Sciences (SPSS v.20). Bivariate analysis using Chi-square tests and multivariable logistic regression were employed to test the study's hypothesis. Analysed data were presented descriptively using tables

SPSS was used to code and enter the survey data. Quantitative data were presented in tabular form using descriptive statistics such as frequencies and percentages. For categorical constructs like age, marital status, education level, occupation, transport mode, family decision makers, and monthly household income, frequencies and percentages were calculated and shown in a frequency table. The study examined the association between the predictor constructs (demographic, socio-cultural, and economic characteristics, prenatal visits) and the outcome construct (place of birth). The significance level for the relationships between the variables was $p < 0.05$, with 95% confidence intervals.

4. Results

4.1 Socio-cultural Factors and Choice of Delivery Place

Education level, previous mode of delivery, preference for traditional birth attendants (TBAs), and cultural alignment with professional healthcare were significant determinants of place of birth. Mothers with secondary education and above preferred facility delivery (COR = 2.21). Similarly, mothers who had previously delivered through cesarean section preferred facility delivery (COR = 2.92). Community preference for TBAs was also a significant determinant. Mothers from communities where TBAs were not preferred had more facility births (COR = 2.28). In addition, mothers whose cultural expectations aligned with professional healthcare had higher odds of facility delivery (COR = 2.10; 95% CI: 1.18–3.73). Other variables, including age, marital status, religion, parity, and antenatal care attendance, were not statistically significant ($p > 0.05$), although some showed positive trends toward increased facility delivery.

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Table 1: Socio-cultural Factors and Place of Delivery

Variable	Response	Home n (%)	Health Facility n (%)	Total	χ^2	df	p-value	COR	95% CI
Age	18–25	33 (24.8)	100 (75.2)	133	1.23	1	0.267	1.47	0.82–2.63
	26+	28 (18.7)	122 (81.3)	150					
	Total	**61**	**222**	**283**					
Marital Status	Married	19 (16.4)	97 (83.6)	116	2.62	1	0.106	1.71	0.89–3.28
	Not married	42 (25.1)	125 (74.9)	167					
	Total	**61**	**222**	**283**					
Religion	Muslim	24 (21.2)	89 (78.8)	113	0.00	1	1.000	1.04	0.57–1.89
	Non-Muslim	37 (21.8)	133 (78.2)	170					
	Total	**61**	**222**	**283**					
Education	Secondary and above	26 (15.9)	138 (84.1)	164	6.72	1	0.010	2.21	1.23–3.97
	Below secondary	35 (29.4)	84 (70.6)	119					
	Total	**61**	**222**	**283**					
Parity	Primipara	12 (17.1)	58 (82.9)	70	0.75	1	0.386	1.44	0.70–2.96
	Multipara	49 (23.0)	164 (77.0)	213					
	Total	**61**	**222**	**283**					
ANC Visits	1–4 visits	50 (24.5)	154 (75.5)	204	3.17	1	0.075	0.54	0.27–1.07
	5–8 visits	11 (13.9)	68 (86.1)	79					
	Total	**61**	**222**	**283**					
Previous Mode of Delivery	Caesarean	10 (11.4)	78 (88.6)	88	6.99	1	0.008	2.92	1.39–6.12
	Non-CS	51 (26.2)	144 (73.8)	195					
	Total	**61**	**222**	**283**					
Decision-maker	Self	15 (15.0)	85 (85.0)	100	3.35	1	0.067	1.89	0.96–3.72
	Others	46 (25.1)	137 (74.9)	183					
	Total	**61**	**222**	**283**					
Culture Influences Choice	Yes	57 (23.2)	189 (76.8)	246	2.22	1	0.136	1.49	0.49–4.50

	No	4 (10.8)	33 (89.2)	37					
	Total	**61**	**222**	**283**					
Religion Influences Choice	Yes	56 (22.0)	198 (78.0)	254	0.13	1	0.720	0.82	0.30–2.23
	No	5 (17.2)	24 (82.8)	29					
	Total	**61**	**222**	**283**					
Distance Influences Choice	Yes	60 (23.1)	200 (76.9)	260	3.35	1	0.067	0.15	0.02–1.13
	No	1 (4.3)	22 (95.7)	23					
	Total	**61**	**222**	**283**					
Preference for TBAs in Community	Not preferred	27 (15.9)	143 (84.1)	170	7.28	1	0.007	2.28	1.28–4.05
	Preferred	34 (30.1)	79 (69.9)	113					
	Total	**61**	**222**	**283**					
Societal Norms/Taboos Exists	Yes	39 (25.0)	117 (75.0)	156	2.01	1	0.157	0.69	0.39–1.23
	No	22 (17.3)	105 (82.7)	127					
	Total	**61**	**222**	**283**					
Cultural Expectations Align	Yes	33 (17.3)	158 (82.7)	191	5.60	1	0.018	2.10	1.18–3.73
	No	28 (30.4)	64 (69.6)	92					
	Total	**61**	**222**	**283**					

4.2 Economic Factors and Choice of Delivery Place

Mothers' ability to afford the preferred place of birth significantly influences her choice ($\chi^2 = 6.65$, $p = 0.010$). Mothers who found hospital deliveries unaffordable were more likely to deliver at home (COR = 2.31). Similarly, delivery costs that discouraged use of health facilities were significantly associated with home delivery ($\chi^2 = 6.12$, $p = 0.013$), with affected mothers more likely to choose home delivery (COR = 2.14).

The perception that economic challenges increase the likelihood of home delivery was also strongly associated with delivery place ($\chi^2 = 9.56$, $p = 0.002$). Mothers who reported this were three times more likely to deliver at home (COR = 2.81), reinforcing financial hardship as a key barrier to facility delivery.

Other variables, including economic participation, transport costs, informal financial support, and employment status, were statistically insignificant ($p > 0.05$), although they showed trends suggesting that economic constraints may reduce facility utilization. Insurance experience was borderline significant ($p = 0.059$), suggesting a potential influence on delivery decisions.

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Table 2: Economic Factors and Place of Delivery

Variable	Response	Home n (%)	Health Facility n (%)	Total	χ^2	df	p-value	COR	95% CI
Economic Participation	Yes (economic activity)	31 (18.2)	139 (81.8)	170	2.30	1	0.129	1.62	0.91–2.89
	No	30 (26.5)	83 (73.5)	113					
	Total	**61**	**222**	**283**					
Household Income (binary)	< KSh 10,000	28 (32.9)	57 (67.1)	85	8.38	1	0.004	3.02	1.64–5.55
	≥ KSh 10,000	33 (16.7)	165 (83.3)	198					
	Total	**61**	**222**	**283**					
Affordability of Delivery Place	Delivery place not affordable	43 (27.6)	113 (72.4)	156	6.65	1	0.010	2.31	1.24–4.29
	Affordable	18 (14.2)	109 (85.8)	127					
	Total	**61**	**222**	**283**					
Delivery Costs Discourage Use	Costs discourage facility use: Yes	30 (30.3)	69 (69.7)	99	6.12	1	0.013	2.14	1.19–3.83
	No	31 (16.8)	153 (83.2)	184					
	Total	**61**	**222**	**283**					
Effect of Costs	Delayed service due to inability to pay	24 (28.2)	61 (71.8)	85	2.67	1	0.102	1.71	0.94–3.11
	Other cost effects	37 (18.7)	161 (81.3)	198					
	Total	**61**	**222**	**283**					
Free/Subsidized Services Influence	Free/subsidized services influence: Yes	39 (19.1)	165 (80.9)	204	2.08	1	0.150	1.63	0.88–3.01
	No	22 (27.8)	57 (72.2)	79					
	Total	**61**	**222**	**283**					

Transport Cost Influence	Transport cost influences choice: Yes	47 (24.5)	145 (75.5)	192	2.51	1	0.113	0.63	0.33–1.21
	No	14 (15.4)	77 (84.6)	91					
	Total	**61**	**222**	**283**					
Informal Financial Arrangements Support	Informal financial arrangements support: Yes	32 (20.5)	124 (79.5)	156	0.11	1	0.744	1.09	0.62–1.93
	No	29 (22.8)	98 (77.2)	127					
	Total	**61**	**222**	**283**					
Employment Status Affects Choice	Yes	35 (19.7)	143 (80.3)	178	0.74	1	0.391	1.38	0.77–2.48
	No	26 (24.8)	79 (75.2)	105					
	Total	**61**	**222**	**283**					
Hidden Costs Impact	Hidden costs impact choice: Yes	42 (25.6)	122 (74.4)	164	3.24	1	0.072	0.55	0.29–1.04
	No	19 (16.0)	100 (84.0)	119					
	Total	**61**	**222**	**283**					
Home Delivery Likely Due to Economic Challenges	Home more likely due to economic challenges: Yes	46 (28.4)	116 (71.6)	162	9.56	1	0.002	2.81	1.49–5.30
	No	15 (12.4)	106 (87.6)	121					
	Total	**61**	**222**	**283**					
Insurance Experience	Insurance: Positive experience/benefit	24 (16.7)	120 (83.3)	144	3.58	1	0.059	1.82	0.99–3.34
	Negative or barriers	37 (26.6)	102 (73.4)	139					
	Total	**61**	**222**	**283**					

5. Conclusion

Socio-cultural factors, family influence, cultural norms, and community expectations strongly influenced the place of delivery even when accessible and affordable healthcare services were available. Economic factors, particularly household income and indirect costs, influenced mothers' choice of place of delivery. Cultural norms and economic constraints also drove home delivery.

6. Recommendations

Interventions to address indirect costs associated with hospital deliveries will be implemented by reducing hidden fees, providing transport vouchers, and running campaigns to increase awareness of the benefits, access to, and use of programs like Linda Mama/SHA.

The government should increase facility coverage to reduce travel distances from households to facilities and improve hospital infrastructure to improve the quality of service delivery.

Hospitals should improve respectful maternity care by providing trust-building community initiatives, patient feedback systems, and staff training.

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