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Effect of Own Source Revenue-Funded Prenatal Care Services on Maternal Wellbeing in Makueni County, Kenya

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Abstract

Purpose: The issue of maternal health continues to be a public health problem in Kenya regardless of the continuous efforts being made to enhance maternal health care services. Antenatal care services are some of the essential interventions that can help reduce maternal health risks and ensure positive maternal outcomes. The Own Source Revenue (OSR) has been widely used to fund maternal health care services in Makueni County. However, limited empirical evidence exists on the contribution of OSR-funded prenatal care services to maternal wellbeing. This study sought to examine the effect of Own Source Revenue-funded prenatal care services on maternal wellbeing in Makueni County, Kenya.

Methodology: The study was guided by the Women in Development Theory and Feminist Theory and adopted a mixed-methods research approach. A descriptive cross-sectional research design was employed. The target population comprised 12,460 mothers attending maternal healthcare services at Makueni County Mother and Child Hospital, Makindu Sub-County Hospital, Kibwezi Sub-County Hospital, and Tawa Sub-County Hospital. The sample size used for the study involved 388 participants chosen randomly using stratified and systematic sampling approaches while purposive sampling method was employed in selecting key informants. The research data was gathered using questionnaires and key informant interviews. The quantitative data collected was analyzed using both descriptive and inferential statistical methods while qualitative data was analyzed using thematic analysis approach. From the results obtained, it is evident that Own Source Revenue-funded prenatal care services greatly impacted on mothers' welfare.

Findings: The majority of the respondents indicated that prenatal care services increased access to antenatal services through scheduling reminders and appointments (M=3.47, SD=1.44). Also, from the results, affordability of prenatal care services positively affected the use of these services although transport costs and financial constraints in some households posed a challenge to some of the mothers (M=3.13, SD=1.48). Moreover, the availability of qualified health personnel, medical supplies, equipment, and diagnostic services made the prenatal care services better. There was a positive and significant relationship between maternal well-being and prenatal care services through correlation analysis. Moreover, regression analysis revealed that prenatal care services were positively and statistically significant predictors of maternal well-being ($\beta = 0.275$, $p < 0.05$). This was because prenatal care services were the best predictors of maternal well-being from all other components of maternal health services. This research has found that prenatal care services supported by OWR have positively contributed to the improvement of maternal well-being due to availability, affordability, and accessibility of maternal health services.

Unique Contribution to Theory, Practice and Policy: This research recommends that there should be more county investments in antenatal care services.

Keywords: *Own Source Revenue, Prenatal Care Services, Maternal Wellbeing, Maternal Health, Antenatal Care, Makueni County, Kenya*

JEL Codes: *I12, I18, H75, J13*

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INTRODUCTION

Maternal health poses a great threat to mothers across the globe despite considerable financing of maternal health programs. About 287,000 maternal deaths take place each year due to complications associated with pregnancy and child birth, and more than 95% of these deaths occur in less developed nations according to the World Health Organization (WHO, 2024). In addition to maternal deaths, there is an occurrence of maternal illness in millions of women that has negative impacts on physical, psychological and social wellbeing of women. Enhancing maternal wellbeing is thus an important consideration under Sustainable Development Goals (SDG 3) aimed at promoting healthy living and well-being of all people.

In most developing nations, insufficient financing of healthcare services limits the provision of quality maternal health services. Maternal health services including health education, ante-natal care, skilled childbirth, and post-natal care need financing methods for sustainability. Despite considerable government financing and funding by development partners in maternal health programs, financial constraints have forced local governments to come up with other ways of financing health service provision (World Bank, 2023).

Under the devolved system of governance in Kenya, county governments are mandated to provide health care services including maternal and child health care services. County governments are funded from the equitable share allocation from the national government, conditional grants, donor funding, and own source revenues (OSR). Own source revenue includes money raised by county governments through user fees, business permits, parking fees, property rates, among other sources. The revenue is becoming more important as a way of financing health care facilities through the Facility Improvement Fund (FIF) to help counties develop health facilities, purchase drugs, and deliver health services (Council of Governors, 2023).

Healthcare financing and the wellbeing of mothers is explained by the theories of Women in Development and Feminist Theory. The Women in Development Theory stresses the importance of investments in services aimed at improving the status of women. The Feminist Theory states that gender-sensitive policies and resource allocation are necessary in dealing with systemic problems facing women's health outcomes. Therefore, financing maternal health care through OSR may improve the health outcomes of mothers.

The Makueni County is known to be among the counties that have successfully adopted the Facility Improvement Fund mechanism, where the local health facilities can retain a portion of the income generated to improve the delivery of health services. Through Own Source Revenue financing, the county has made investments in maternal health literacy programs, pre-natal health services, labor and delivery health services, and postnatal health services meant to improve the state of health of the mother.

However, despite these improvements, maternal health problems still exist. Although several research papers have addressed maternal health care utilization, health financing, and maternal mortality in Kenya, there is a paucity of research addressing the role of Own Source Revenue-financed maternal health services in enhancing the health of mothers in Kenya. More importantly, existing literature on maternal health care financing focuses on health financing systems and schemes at the national level, funded through various donors.

Makueni County provides an appropriate context for examining this relationship due to its continued investment in health services through Own Source Revenue and the

operationalization of the Facility Improvement Fund. Understanding whether investments in maternal health literacy, prenatal care, labour and delivery services, and postnatal support services translate into improved maternal wellbeing is important for informing county health financing policies and strengthening maternal healthcare interventions.

This study therefore sought to examine the effects of Own Source Revenue-funded health services on maternal wellbeing in Makueni County, Kenya. Specifically, the study focused on the influence of prenatal care services on maternal wellbeing, thereby contributing to the understanding of how county-generated healthcare financing can improve maternal health outcomes.

Statement of the Problem

However, maternal wellbeing is still considered a serious public health issue in Kenya in spite of heavy government funding for maternal health services in terms of maternal wellbeing. As per the results of the KDHS (2022), maternal health issues including pregnancy-related problems, underutilization of maternal healthcare services, and postnatal care problems persist among many Kenyan women, especially in rural and semi-arid counties. Despite prioritizing maternal health in the form of UHC and devolved health system in the Government of Kenya, disparity continues in accessing and utilizing maternal health services.

Even though there have been the institution of the Facility Improvement Fund (FIF), and increased allocations to maternal health from Own Source Revenue, the indicators for maternal health in the County are still not at an optimal level, indicating some sort of disconnect between the financial investment in prenatal care services and improvements in the maternal health condition. Although there have been efforts made by the county in terms of improving the prenatal healthcare, there is no certainty regarding whether these financial investments have actually been able to improve accessibility, availability and affordability of prenatal services. Some of the problems that might arise include those like transport charges, geographic inequality of access to health facilities, lack of skilled manpower and inadequate supplies among others.

Despite increased investments in prenatal healthcare services, concerns remain regarding the extent to which these services contribute to improved maternal wellbeing. Although mothers continue to attend antenatal clinics, challenges related to financial constraints, transport costs, availability of skilled personnel, medical equipment, and essential supplies may still limit the effectiveness of prenatal care interventions. Consequently, variations in maternal wellbeing outcomes continue to be reported despite the existence of OSR-funded prenatal care programs.

Existing empirical studies in Kenya have largely focused on maternal healthcare utilization, maternal mortality, and general health financing, with limited attention given to the specific contribution of Own Source Revenue-funded prenatal care services to maternal wellbeing. Furthermore, few studies have examined how county-generated revenue financing influences the accessibility, affordability, and availability of prenatal care services and their subsequent effect on maternal wellbeing at the county level. This knowledge gap is particularly evident in Makueni County, where Own Source Revenue has become an important source of healthcare financing.

Thus, this study was intended to fill the gap through an assessment of the effect of Own Source Revenue-funded prenatal care services on maternal wellbeing in Makueni County, Kenya. This

study was anticipated to reveal empirically the effect that accessibility, availability, and affordability of such services have on maternal well-being.

Justification of the Study

These results from the research will be helpful to the policymakers, county governments, health managers, development partners, and researchers since they will be providing empirical results on the role of OSR funded maternal health services in maternal wellbeing. The study will particularly provide information on how investment in maternal health literacy services, maternal prenatal care services, labour and delivery services, and postnatal services affect the wellbeing of mothers in Makueni County.

Moreover, the research will provide results on the effectiveness of the OSR generated funds as a sustainable finance model for maternal health services. These findings will assist county governments and health managers to make sound decisions regarding resource allocation, improving the provision of services, and prioritizing maternal health interventions. The study will further reveal the challenges that hinder access to quality and affordable maternal health services despite the ongoing investments through OSR.

In addition to that, the research will contribute to the already existing literature on health financing and maternal health by filling the existing knowledge gap concerning the association between health services funded by Own Source Revenue and maternal health. The results of the study will be helpful in formulating and implementing evidence-based policies that will help strengthen the health care system for mothers in Kenya. This research will be very instrumental in achieving Universal Health Coverage and Sustainable Development Goal Three.

Scope of the Study

Data collection for the research was done among mothers aged 18 years and above seeking prenatal care services in four selected public health institutions in Makueni County; specifically, Makueni County Mother and Child Hospital, Makindu Sub-County Hospital, Kibwezi Sub-County Hospital, and Tawa Sub-County Hospital. The total target population for this study is 12,460 mothers seeking maternal healthcare services from these institutions. Stratified and systematic sampling techniques were used to select a sample size of 388 respondents in order to ensure that there is enough representation in each of the four health institutions. Primary data was collected by distributing structured questionnaires to the mothers whereas qualitative data was collected through interviews of key informants in the health institutions. The aim of this study was to evaluate the effect of Own Source Revenue (OSR) funded prenatal care services on maternal wellbeing with special focus on accessibility, affordability, and availability of prenatal care services.

In addition to providing empirical evidence for Makueni County, the study adds to the HSS research by analyzing the impact of health financing generated at the county level on the delivery of essential maternal healthcare services and the welfare of the population. Specifically, the study provides empirical evidence regarding the effectiveness of Own Source Revenue in terms of its use as a sustainable health financing approach in improving the delivery of prenatal health services. Through the FIF initiative, the study contributes to the field of knowledge concerning how health financing and the mobilization of domestic resources can contribute to strengthening the pillars of a health system, including service delivery, availability of essential medical products, human resources for health, and financing. In this

way, the study contributes to informing county governments, the Ministry of Health, and development partners on the need for evidence-informed policy decisions to improve the efficiency, equity, and sustainability of financing maternal health care within Kenya's devolved health system. Moreover, the study contributes to the existing literature on domestic health financing and maternal health care in developing countries and Low and Middle Income Countries (LMICs) in general.

LITERATURE REVIEW

In this section, literature on the influence of prenatal care services on maternal wellbeing is reviewed. The discussion is organized into three main areas, namely the theoretical framework of the study, global and regional empirical studies, and the conceptual relationship between Own Source Revenue-funded prenatal care services and maternal wellbeing. Particular emphasis is placed on accessibility, affordability, and availability of prenatal care services as key determinants of maternal wellbeing.

Theoretical Framework

The study is anchored on two major theories that explain the relationship between prenatal care services and maternal wellbeing, namely the Women in Development (WID) Theory and Feminist Theory. These theories provide a comprehensive explanation of how access to maternal healthcare services improves women's health outcomes and overall wellbeing.

Human Capital Theory

Human Capital Theory is an economic concept developed by Theodore Schultz in 1961 and further elaborated by Gary Becker in 1964. The theory maintains that investments in education, health, and skills development improve the efficiency, happiness, and general wellbeing of people. In relation to the present discussion, according to the theory, health is a human capital since healthy individuals are productive and can efficiently contribute to society.

The theory is related to this paper because maternal health services including maternal health literacy, prenatal care, labour and delivery services, and postnatal services are investment in the health of women. Mothers gain knowledge of nutrition, hygiene, safe pregnancy practices, and disease prevention through such investment which enhances their wellbeing.

However, the theory has been subjected to criticism because it focuses on the economic aspect of the health investments without considering other determinants such as socio-cultural and gender determinants that affect access to the healthcare services.

Women in Development (WID) Theory

Women in Development (WID) Theory was developed in the early 1970s by Esther Boserup (1970). This theory focuses on incorporating women in development process through provision of education, healthcare, employment, and productive resources. The theory holds that development processes are improved where women are incorporated and empowerment achieved.

This theory applies in the current research since maternal health services focus on addressing health issues of women during their reproductive life stage. Provision of services through OSR financing increases access to healthcare services, health information, healthcare workers, and maternal support services by women. Through these activities, women become healthier and capable of looking after themselves and their children.

The main drawback of WID theory is that the focus is on integrating women within the current development system without considering the structural barriers and the imbalance of power faced by women. However, the theory still plays a crucial role due to the emphasis it places on women's health issues.

Feminist Theory

The Feminist Theory was formulated by scholars like Simone de Beauvoir (1949) among other scholars of feminism. According to the theory, gender inequalities have an impact on resource acquisition and usage, opportunities, decision making and outcome in society. The theory aims at explaining and overcoming barriers that put women at a disadvantage in society.

The theory is relevant in relation to this study since maternity healthcare is by definition gendered. Access to maternal healthcare services is affected by a number of variables like household decision making, resource ownership, cultural factors and gender relations. OSR funded maternal health services would overcome these barriers through increased accessibility, affordability and availability of maternal health services. Increased maternal healthcare services provide empowerment to women to make informed healthcare decisions.

Feminism theory has been critiqued on the grounds of putting too much emphasis on gender relations while ignoring economic and institutional variables influencing wellbeing of individuals. Nonetheless, the theory remains very relevant in view of the insights it provides regarding the impact of gender inequalities on health of women and access to maternal health services.

Empirical Review

Effect of Own Source Revenue-Funded Prenatal Care Services on Maternal Wellbeing

Prenatal care services have been acknowledged to be one of the most significant measures of enhancing maternal welfare since they aid in the early detection and handling of complications arising during pregnancy, health education, and preparation of mothers for delivery. Effective prenatal care services enhance maternal wellbeing in that they help reduce maternal morbidity and mortality through ensuring that there is timely provision of skilled health services during pregnancy as indicated by the World Health Organization (WHO, 2023). Under the WHO health systems framework (WHO, 2007), effective prenatal care services rely much on two of the building blocks of the health systems which include health financing and service delivery. Health financing helps ensure the mobilization and allocation of sufficient financial resources towards provision of maternal health services while service delivery involves making sure there is quality and accessible health services. In the present case, OSR in relation to FIF constitutes health financing in a county aimed at enhancing prenatal care services delivery.

Access to prenatal care services is one of the most important factors that contribute to good health of mothers. According to Titaley et al. (2021), mothers who had easy access to antenatal clinics were able to make all the antenatal visits and were provided with appropriate interventions in their pregnancies which helped them maintain better health. In the same manner, Mugo and Wanjiru (2022) concluded that availability and accessibility to maternal health care services helped pregnant mothers in Kenya make use of these services. In the context of the WHO Health Systems Framework, accessibility indicates the effectiveness of the building block of service delivery.

Financial accessibility is yet another critical factor that influences the wellbeing of mothers. The Kenya Health Policy Review (2023) stated that consultation charges, transportation costs,

and medical costs continue to pose as critical barriers when accessing maternal healthcare services. Counties with sufficient domestic funding from Own Source Revenue overcome financial barriers, which makes accessing maternal healthcare services easier for them. According to the WHO Health System Framework, sufficient funding ensures that governments avoid health catastrophes on their people, achieve equitable access to healthcare services, and provide critical health services to mothers without any health expenditure.

It is also equally crucial to have enough skilled healthcare providers and medical supplies in order to enhance the health of mothers. According to Gitonga et al., (2022), it was evident that facilities that had enough staff such as skilled nurses, midwives, and clinical officers showed more satisfied mothers who also had better outcomes during their pregnancies than those facilities that lacked sufficient staff. Skilled health workers do antenatal testing, monitor the progression of pregnancy, diagnose any complications and intervene accordingly which enhances the wellbeing of the mother. Similarly, according to UNICEF, (2023), it was evident that health facilities that had adequate diagnostic tools, medication and medical supplies were more efficient in diagnosing any complications in pregnancy and treating the mother effectively.

Moreover, pre-natal care services help in the wellness of mothers through health education and counselling. As identified by Kabiru and Mutua (2022), antenatal clinics are used to conduct health education among pregnant women in nutrition, hygiene, birth preparation, dangers during pregnancy, and newborn care. These activities increase mothers' awareness and lead to proper decision-making concerning the process of pregnancy and child-birth. Besides, according to Ngugi et al. (2023), women who regularly attended antenatal clinics also accessed skilled delivery and post-natal care services, improving maternal health due to consistency of health care. In this regard, from WHO Health Systems Framework, the interventions above show how quality service delivery leads to an improvement in maternal healthcare through the continuum of care.

In spite of the above mentioned advantages, a number of issues remain hindrances to the effective provision of prenatal care services. According to WHO (2023), the lack of health care personnel, insufficient funding, distance to reach the health facilities, costs of transportation, lack of medicines, and medical equipment hinder the access and quality of prenatal care in many low- and middle-income countries. The above mentioned factors reveal the weaknesses of two components of the health care system, that is, health financing and health services delivery, which affect the well-being of mothers. Although a number of previous studies have confirmed the significance of prenatal care in maternal health outcomes, few studies have been done on the impact of OSR-funded prenatal care services on accessibility, affordability, availability, and quality of these services and subsequently maternal well-being in Makueni County.

Conceptual Framework

This conceptual framework illustrates the relationship between Own Source Revenue (OSR)-Funded Prenatal Care Services (independent variable) and Maternal Wellbeing (dependent variable). The study examines how investments made through county own-source revenue influence the quality and accessibility of prenatal care services and, consequently, maternal wellbeing in Makueni County. The independent variable, OSR-funded prenatal care services, include accessibility, affordability, availability of qualified health professionals, and availability of medical equipment and supplies. Accessibility is about the ease with which

expectant mothers can access antenatal services. Affordability is about the availability of antenatal services to pregnant women in such a way that there is no difficulty in terms of finance. Availability of skilled healthcare professionals is about the availability of qualified nursing staffs, midwifery professionals, clinicians, and others who can provide antenatal care services. Availability of equipment and supplies is about the availability of diagnostic equipment, medication, nutritional supplements, laboratory, and others. In this case, increased county investment through OSR makes the quality of prenatal care services provided increase due to the improvement in terms of health care infrastructure, personnel staffing, availability of medical commodities and access to antenatal care services. Consequently, expectant women will be able to go for antenatal clinics on a regular basis, obtain medical attention, get health education and detect and treat complications associated with pregnancy. Maternal well-being (dependent variable) is measured through health of the mother, self-care and nutrition. Provision of better prenatal care services will ensure maternal well-being through reduction of complications during pregnancy, increase in health education, improve self-care and nutrition skills. In general, the theory suggests that proper investment of OSR towards prenatal care services will increase the quality, availability and accessibility of these services, hence improving maternal well-being of expectant mothers in Makueni County.

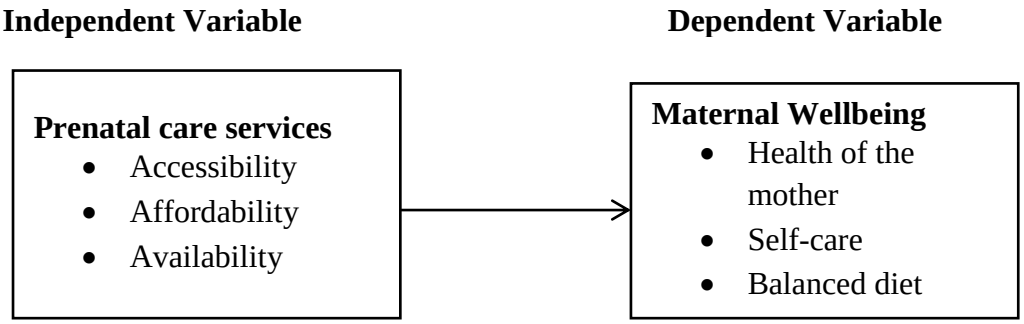

Figure 1: Conceptual Framework

METHODOLOGY

The methodology used in this study was descriptive in nature because it aimed at examining the effect of Own Source Revenue (OSR)-funded prenatal care services on maternal wellbeing in Makueni County, Kenya. The descriptive approach was appropriate since it enabled the study to collect factual and objective information from mothers utilizing prenatal healthcare services and to explain the relationship between the independent variable (OSR-funded prenatal care services) and the dependent variable (maternal wellbeing). This section therefore presents the research design, target population, sampling technique, sample size, data collection instruments, and data analysis procedures that were used to generate findings for the study.

Research Design

According to Kothari (2020), a research design provides the overall framework for data collection, measurement, and analysis. This study adopted a descriptive cross-sectional survey research design, which enabled the systematic collection of both qualitative and quantitative data from mothers receiving maternal healthcare services in public health facilities in Makueni County. The descriptive cross-sectional design was appropriate because it facilitated the examination of the effect of OSR-funded prenatal care services on maternal wellbeing without manipulating the study variables. The design enabled the researcher to assess mothers'

experiences and perceptions regarding accessibility, affordability, and availability of prenatal care services and how this influenced maternal wellbeing.

This design was perfect in establishing the relationship between pre-natal care services and maternal health indicators such as the health of the mother, self-reliance and balancing of diets. Through this technique, the researcher managed to gain information from the respondents on how easily the services were accessible, availability of professional help, presence of medical equipment, availability of drugs and costs associated with accessing antenatal services. With this research technique, the researcher managed to obtain credible results that showed the actual experiences of mothers accessing prenatal health services in Makueni County.

Target Population

For this study, the target population comprised mothers attending maternal healthcare services in selected public health facilities in Makueni County, Kenya. The study focused on mothers who had received prenatal care services and were therefore capable of providing information regarding accessibility, affordability, and availability of prenatal healthcare services funded through county own-source revenue. The target population consisted of 12,460 mothers attending maternal healthcare services at four public health facilities in Makueni County, namely: Makueni county mother and child hospital, Makindu sub-county hospital, Kibwezi sub-county hospital and Tawa sub-county hospital

These facilities were selected because they are the major public healthcare institutions providing comprehensive maternal healthcare services within the county and receive funding support through Own Source Revenue allocations. In addition, the study included key informants comprising healthcare workers, facility administrators, and maternal health coordinators who possessed relevant information regarding the financing, implementation, and delivery of prenatal care services. These key informants provided qualitative information that complemented the data collected from mothers.

Stratified sampling was used in order to achieve representativeness based on the chosen four health institutions, while systematic random sampling was applied in selecting the respondents proportionally from each institution based on the number of people. This strategy was helpful in achieving representativeness of the respondents from all the chosen hospitals. In addition, it ensured validity and reliability of the findings concerning the impact of OSR-funded prenatal care services on maternal health.

Sampling Technique and Sample Size

Sampling can be defined as the act of selecting a representative subset of the population for the purpose of conducting the study (Kumar, 2018). The study employed the stratified random sampling approach, which is suitable for heterogeneous populations in order to ensure proportionate representation of all the various sub-populations in the sample chosen (Taherdoost, 2020). Stratification was done according to the four public health facilities selected, which include the Makueni County Mother and Child Hospital, Makindu Sub-County Hospital, Kibwezi Sub-County Hospital, and Tawa Sub-County Hospital.

The size of the sample used was calculated using the simplified Yamane's formula at 5 percent margin of error (Yamane, 1967).

$$\text{As follows } n=\frac{N}{1+N(e)2}$$

Where n= Sample size

N = Total population size (12,460)

e = Margin of error (assumed at 5% or 0.05)

n = 12,460/ (1 + 12,460 (0.05) ^2)

n ≈ 338

Therefore, the total sample size for the study was 388 respondents.

Data Collection Tools

The data was collected using questionnaires that had both closed-ended and open-ended questions from the mothers accessing prenatal healthcare services. The questionnaires were chosen since questionnaires are very good tools for collecting standardized data from a large sample size within a limited period of time (Kombo & Tromp, 2022). This was an appropriate method for collecting data about the experiences of the mothers accessing the prenatal healthcare services through OSR and how these services affected the wellbeing of the mothers. Closed-ended questions provided quantitative data about the prenatal healthcare services such as the availability, access, and cost of the services as well as the wellbeing of the mother. This included the mother's health, self-care, and balanced diet. Open-ended questions provided additional information about the experiences of the mothers when accessing the healthcare services.

Moreover, Key Informant Interview (KII) guides were employed to collect qualitative data from the administrators, nurses, and maternal health coordinators in the health facilities. The interviews supplied detailed information on the role that the financing through Own Source Revenue plays in the provision of prenatal care in Makueni County. Reliability and validity of the study instruments were confirmed through a pilot test conducted in a government health facility, which was not part of the study sample. Information from the pilot test was then used to revise the questionnaires and KII guides.

Data Processing and Analysis

After ensuring that the data collected was complete, consistent, and accurate, it was coded and analyzed using the Statistical Package for Social Sciences (SPSS) version 22 software. Data cleaning was carried out in order to find mistakes and correct any missing values while including only valid answers. The descriptive statistics of frequency, percentage, mean, and standard deviation were used in the process of summarizing the information about respondents and the variables in the study. This was done in order to provide a description of mothers' views on access and availability of prenatal care services as well as maternal wellbeing.

Inferential statistics were employed to determine the relationship between prenatal care services and maternal wellbeing. Specifically, Pearson Product Moment Correlation Analysis was used to establish the relationship between OSR-funded prenatal care services and maternal wellbeing. Further, simple linear regression analysis was used to determine the effect of prenatal care services on maternal wellbeing.

The regression model was specified as:

$$Y=\beta_0+\beta_1X_1+\varepsilon$$

Where:

Y = Maternal Wellbeing

X_1 = OSR-Funded Prenatal Care Services

β_0 = Constant Term

β_1 = Regression Coefficient

ε = Error Term

The test of significance of the entire regression model using Analysis of Variance (ANOVA) was done at a significance level of 5 percent ($p < 0.05$). This ensured that the study could make sound statistical conclusions about the impact of prenatal care provided by OSR funds on the well-being of pregnant women in Makueni County, Kenya.

RESULTS

Demographic Characteristics

The demographic information of the participants was vital in profiling mothers who use prenatal health care services in Makueni County and how such information affected their well-being. The participants of this study were selected from four different public health centers offering maternal health care services; specifically, Makueni County Mother and Child Hospital, Makindu Sub-County Hospital, Kibwezi Sub-County Hospital, and Tawa Sub-County Hospital. The varied participants made the study reliable. The age distribution is concerned, more than half of the respondents were aged between 20 and 29 years (43.81%) and those aged between 30 and 39 years (37.11%). Those who were above 40 years old comprised 13.92% and those below 20 years comprised 5.15% of the total number of respondents. This implies that the most of the users of prenatal health care services were at their reproductive age.

In relation to the marital status, the highest percentage of respondents (78.35%) was married, followed by single mothers (10.82%), widowed mothers (6.44%), and divorced mothers (4.38%). This is an indication that family and partner assistance may be a key component in motivating mothers to use the antenatal health services. Regarding the level of education, the majority of the respondents (44.33%) had secondary education, followed by primary education (27.84%), college education (14.95%), university education (9.28%), and those without any formal education (3.61%). It is an indication that most of the mothers were educated and could understand maternal health information.

On the number of children, the greatest proportion of the participants was in the range of two to three children (44.59%), seconded by those with four to five children (25.77%), those with one child (22.42%), and those with more than five children (7.22%). This result shows that the participants had some experience with childbirth before, which might affect their knowledge and use of pre-natal healthcare services. On the health facilities visited, the largest number of the participants came from Makueni County Mother and Child Hospital (36.08%), seconded by Makindu Sub-County Hospital (24.48%), Kibwezi Sub-County Hospital (20.62%), and Tawa Sub-County Hospital (18.81%).

Table 1: Demographic Characteristics of Respondents

Variable	Category	Frequency (n)	Percentage (%)
Age Bracket	18-19 years	20	5.15
	20–29 years	170	43.81
	30–39 years	144	37.11
	Above 40 years	54	13.92
Marital Status	Single	42	10.82
	Married	304	78.35
	Divorced	17	4.38
	Widowed	25	6.44
Level of Education	Informal/No formal education	14	3.61
	Primary	108	27.84
	Secondary	172	44.33
	College	58	14.95
	University	36	9.28
Number of Children	1 Child	87	22.42
	2–3 Children	173	44.59
	4–5 Children	100	25.77
	Above 5 Children	28	7.22
Health Facility Attended	Makueni County Mother and Child Hospital	139	36.08
	Makindu Sub-County Hospital	82	24.48
	Kibwezi Sub-County Hospital	78	20.62
	Tawa Sub-County Hospital	76	18.81

These demographic results show that the majority of the individuals who have access to prenatal healthcare services in Makueni County are married and educated women of reproductive age. Most of them had experience giving birth before and they accessed their services from key public hospitals within the county. This shows that these respondents were experienced enough with regard to maternal healthcare services to give accurate information about the impact of prenatal services financed through Own Source Revenue on mothers.

Descriptive Statistics

Effect of Own Source Revenue-Funded Prenatal Care Services on Maternal Wellbeing

Table 2 illustrates the results of the effects of prenatal care services funded by Own Source Revenue (OSR) on the wellbeing of mothers in Makueni County. The analysis was based on three main components of the prenatal care services, which include accessibility, affordability, and availability of prenatal care services. From the findings, it is evident that OSR-funded prenatal care services had a positive effect on the well-being of mothers through improved accessibility to antenatal care, availability of skilled healthcare professionals, medical equipment, and medicines/drugs. On the issue of accessibility of prenatal care services, it is clear from the results that 54.12% of the respondents agreed that they received reminders such as SMS messages to visit antenatal clinics, with a mean score of 3.52 (SD= 1.41). Similarly, 55.41% of the respondents agreed that they were able to visit antenatal clinics according to the schedules provided, resulting in a mean score of 3.54 (SD= 1.42). Additionally, 48.46% of the

respondents noted that prenatal appointments for clinics were made in convenient times, with a mean score of 3.35 (SD= 1.48).

When it comes to accessibility of the prenatal care services, the results show moderately high level of agreement. It is noted that only 41.76% of the respondents felt that they were able to attend all prenatal appointments without any financial problems, with a mean score of 3.09 (SD = 1.50). In the same manner, it is observed that 43.56% of the respondents felt that they did not fail to visit the antenatal clinics for financial reasons, giving a mean score of 3.15 (SD = 1.45). Moreover, 44.58% of the respondents believed that they were able to pay for their prenatal services without much problem, giving a mean score of 3.16 (SD = 1.48). These results show that despite the availability of prenatal care services, financial problems affected the mothers in terms of transport costs and other expenditures. More than half (55.93%) of the participants confirmed that there were skilled health workers who were readily available for their service each time they attended the clinic, giving a mean score of 3.55 (SD = 1.41). In the same way, 55.15% stated that the health workers were available to carry out the required tests and provide the required services during pregnancy, giving a mean score of 3.48 (SD = 1.43). Also, more than half (50.26%) of the participants received sufficient care from the skilled health workers, which gave a mean score of 3.46 (SD = 1.45).

In relation to the availability of medical equipment, the results show that 54.13% of the participants were satisfied with the presence of the necessary medical equipment in prenatal services, scoring 3.46 on the scale (SD = 1.41). Moreover, 52.32% of the participants felt satisfied with the functionality of the medical equipment used during the clinic visits with the average score being 3.44 (SD = 1.45). Furthermore, 55.15% of the participants reported satisfaction with the use of the proper medical equipment during all necessary examinations, scoring 3.55 on the scale (SD = 1.44). This means that the OSR funds had helped to improve the provision and maintenance of medical equipment for prenatal healthcare. Concerning the availability of essential drugs and medical supplies, the findings have shown that most participants responded positively. Specifically, 57.22% of the participants agreed that the essential drugs and supplements were available whenever prescribed. Moreover, 52.58% reported that they were provided with all necessary prenatal drugs in the facility, with a mean rating of 3.42 (SD = 1.47). Also, 53.87% stated that the medical supplies they needed were provided to them instantly, with a mean rating of 3.46 (SD = 1.46). From these figures, it can be seen that provision of drugs and medical supplies improved prenatal care.

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Table 2: Prenatal Care Services and Maternal Health Outcomes

Prenatal Care Service Statement	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	Mean	SD
Received reminders such as SMS messages to attend prenatal clinic visits	12.89	12.63	20.36	18.3	35.82	3.52	1.41
Able to attend antenatal clinic visits as scheduled	13.4	11.08	20.1	18.81	36.6	3.54	1.42
Prenatal clinic appointment dates were convenient	17.53	11.86	22.16	15.21	33.25	3.35	1.48
Attended all scheduled prenatal services without financial difficulty	19.85	20.36	18.04	14.18	27.58	3.09	1.5
Did not miss antenatal clinic visits due to lack of money	18.56	17.01	20.88	18.3	25.26	3.15	1.45
Managed to pay for prenatal services as required	19.85	15.98	19.59	17.78	26.8	3.16	1.48
Skilled health workers were available whenever I visited the clinic	11.86	13.92	18.3	19.07	36.86	3.55	1.41
Health workers were present to provide required prenatal tests and services	15.21	10.57	19.07	21.39	33.76	3.48	1.43
Received adequate attention from qualified health personnel during visits	14.43	12.11	23.2	13.66	36.6	3.46	1.45
Necessary medical equipment was available during prenatal visits	13.92	12.63	19.33	21.91	32.22	3.46	1.41
Equipment used during clinic visits was functional	14.69	14.18	18.81	17.53	34.79	3.44	1.45
Examined using appropriate medical equipment when needed	12.89	13.4	18.56	15.72	39.43	3.55	1.44
Essential drugs and supplements were available when prescribed	12.37	13.92	16.49	17.53	39.69	3.58	1.44
Received all required prenatal medications at the facility	15.46	14.18	17.78	18.04	34.54	3.42	1.47
Medical supplies needed for care were provided without delay	15.21	13.14	17.78	18.3	35.57	3.46	1.46

The results show that prenatal care services supported through the OSR program had a positive impact on the mothers' wellbeing through increasing access and availability of antenatal care services. Nonetheless, the issue of cost was still an issue for some of the mothers, meaning that there is need for more efforts towards making the cost of maternity care services affordable for the mothers. The overall mean score for all the prenatal care services was 3.43, showing that the mothers viewed the services positively.

Regression Analysis

The regression analysis was done to establish the impact of Own Source Revenue (OSR) Funded Prenatal Care Services on Maternal Well-being in Makueni County. From the results obtained, it is clear that there is a positive and significant impact of the prenatal care services on maternal well-being. In the Model Summary, there is a strong relationship between prenatal care services and maternal well-being. This is evident from the regression model where a correlation coefficient of R=0.742 was obtained, which means that there is a strong positive relationship between OSR funded prenatal care services and maternal well-being. The coefficient of determination (R^2=0.551) means that 55.1% of variance in maternal well-being is accounted for by prenatal care services, whereas 44.9% is due to other factors.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.742	0.551	0.536	0.032

ANOVA test findings further proved the significance of the regression model (F = 9.614, p = 0.000), thus implying that prenatal care services had a statistical impact on the welfare of the mothers accessing public health centers in Makueni County.

Table 4: ANOVA Results

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	4.852	1	4.852	9.614	0.000
Residual	3.976	386	0.010		
Total	**8.828**	**387**			

From Table 5, it is evident that the regression coefficients show that prenatal care services have positively affected maternal wellbeing (B = 0.275, β = 0.312, t = 5.320, p = 0.000). This means that an improvement by one unit in terms of accessibility, affordability, and availability of prenatal care services has increased maternal wellbeing.

The constant term (B = 1.982, p < 0.001) is the baseline level of maternal wellbeing keeping prenatal care services constant.

Table 5: Regression Coefficients

Variable	B	Std. Error	Beta (β)	t	Sig.
Constant	1.982	0.294	—	6.741	0.000
Prenatal Care Services	0.275	0.052	0.312	5.320	0.000

The regression equation was therefore expressed as:

$$Y=1.982+0.275X1+\varepsilon$$

Where:

- **Y** = Maternal Wellbeing
- $\mathbf{X_1}$ = OSR-Funded Prenatal Care Services
- **1.982** = Constant
- **0.275** = Regression coefficient
- **ε** = Error term

It is evident from the results that the OSR-funded antenatal care services are very helpful in improving maternal wellbeing by offering better access to antenatal care services, reducing the costs associated with maternal health care, and providing skilled health workers, medical equipment, and antenatal care services. Therefore, with further investments in antenatal care services through OSR financing, maternal wellbeing can be improved in Makueni County.

Summary

This research assessed the impact of prenatal care services funded by Own Source Revenue (OSR) on maternal well-being in Makueni County, Kenya. Information gathered from 388 mothers receiving maternal health services at Makueni County Mother and Child Hospital, Makindu Sub-County Hospital, Kibwezi Sub-County Hospital, and Tawa Sub-County Hospital helped to understand the role played by prenatal care services in improving maternal well-being. The findings obtained from the descriptive analysis showed that the OSR-funded prenatal care services increased the access to, availability, and affordability of maternal healthcare services. The findings indicated that most of the respondents had skilled health workers during the clinic visit (M = 3.55, SD = 1.41), the necessary drugs and supplements were provided when prescribed (M = 3.58, SD = 1.44), and proper medical equipment was available during prenatal visits (M = 3.46, SD = 1.41). Further, the results revealed that prenatal care services contributed to better attendance of antenatal clinics, prompt medical services, diagnostic tests, and health information required for safe pregnancies and deliveries. Thus, it was evident from the research that the Own Source Revenue-funding of prenatal care services is essential in contributing to better wellbeing of mothers through improvement of their health status and practice of proper nutrition. However, limited access to these services due to financial constraints remained a problem for some mothers.

Effect of Own Source Revenue-Funded Prenatal Care Services on Maternal Wellbeing

According to the findings in the study, the OSR-fund Prenatal Care Services have a positive and significant effect on maternal health in Makueni County. Majority of the respondents showed that the prenatal care services increased access to maternal health facilities, increased access to skilled health professionals, as well as increased access to important medications and diagnostic equipment. This is because 55.9% of the respondents felt that skilled health professionals were always available at the time, they visited the facility, 57.2% felt that the medications prescribed to them were always available, whereas 55.1% of the respondents felt that their diagnosis was done through important medical equipment.

Results indicated that prenatal services enhanced maternal capacity in visiting the clinics, receiving medical care, and acquiring health-related information needed for safe childbirth process. The presence of appointment reminders, health practitioners, laboratory services, and medical supplies was vital in enhancing maternal well-being. Nonetheless, some respondents

noted that they were faced with financial problems, such as high costs of transport, thus affecting their visits to the clinics.

However, results from regression analysis indicated the presence of prenatal care services significantly contributed to maternal wellbeing (B = 0.275, β = 0.312, p = 0.000). Prenatal care services accounted for 55.1 percent of the variance of maternal wellbeing (R^2 = 0.551), implying that availability and accessibility of prenatal care services have considerable contributions in determining the state of maternal wellbeing. As such, there is great need for investment in prenatal care services from the County Own Source Revenue in order to improve the wellbeing and self-care practices of mothers as well as their dietary habits.

CONCLUSION AND RECOMMENDATIONS

Conclusion

From the findings, Own Source Revenue (OSR)-funded prenatal care services are important factor that contributes to maternal wellbeing in the county of Makueni, Kenya. From the findings it can be seen that the prenatal care services provided increased the availability of health care service for antenatal care, provision of skilled health care service providers, and availability of drugs, diagnostic services, and medical equipment. From the results of the study, it can be seen that there was a high consensus by the respondents on the availability of skilled health care service providers, medical supply, and prenatal health services. It can be seen from the regression analysis that the prenatal care services have a positive and statistically significant influence on maternal wellbeing (B = 0.275, β = 0.312, p = 0.000). This means that the prenatal care services increase the quality of maternal health outcome through enhancing the accessibility, affordability, and availability of prenatal care services. In addition, it can be noted that the prenatal care services account for a large part of the variance in maternal wellbeing (R^2 = 0.551). Therefore, investment in prenatal care services through county own source revenue plays a vital role in enhancing the health status of pregnant women and fostering good self-care practices as well as proper nutritional intake by the expectant mothers. However, in spite of the positive role played by the prenatal care services, there are financial constraints in the form of transport costs and other forms of indirect healthcare costs which make it difficult for some mothers to access the services.

Recommendations

In order to improve the efficiency of OSR-Funded Prenatal Care Services for enhancing the wellbeing of mothers in Makueni County, the research suggests the following recommendations:

- **More Allocation of Own Source Revenue to Prenatal Care Services:** The County Government of Makueni should increase allocation of own-source revenue to prenatal care services in order to make essential resources for maternal health available continuously. Increased allocation of funds will result in improved quality of antenatal services, good health results and decreased number of complications associated with pregnancies.
- **Increasing Access to Prenatal Care Services:** The County Department of Health should increase the number of outreach antenatal clinics and mobile services in order to overcome geographical barriers faced by expectant mothers.

- **Increase Availability of Professional Health Personnel and Supplies:** Health institutions must make sure there are sufficient personnel, availability of drugs, vitamins, laboratory services, and medical supplies necessary for prenatal care. This will increase the quality of maternal health care services.
- **Improve Antenatal Visit Reminder Systems:** Health institutions should improve antenatal visit reminder systems using SMS alerts, phone calls, and community health promoters' follow-ups.
- **Improve the Quality of Prenatal Health Education:** The prenatal health care programs should be developed in such a way that there is maternal health education concerning nutrition, warning signs of pregnancy, delivery preparations, healthy living practices and prevention of diseases among other related areas.
- **Improve Monitoring and Evaluation of Prenatal Care Services: The** County Department of Health needs to develop an effective monitoring and evaluation system to constantly evaluate the accessibility, affordability, availability and quality of prenatal care services. This will facilitate proper decision-making process and efficient allocation of funds from own-source revenue.

The adoption of the above recommendations will improve the OSR-funded prenatal care services and ultimately the overall well-being of mothers in Makueni County, Kenya.

REFERENCES

Abu-Lughod, L. (1990). The romance of resistance: Tracing transformations of power through Bedouin women. *American Ethnologist, 17*(1), 41–55.

Achieng, J., Otieno, D., & Kariuki, P. (2024). *Digital innovations for maternal and child health service delivery in low-resource settings*. *African Journal of Health Systems, 16*(2), 45–57.

Acirucan, P., Nankumbi, J., Ngabirano, T. D., & Muwanguzi, P. (2025).

Amref Health Africa in Kenya. (2023). *County maternal health performance report*.

Amref Health Africa. (2024). *Maternal and child health progress report in Kenya*.

Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Institute of Planners, 35*(4), 216–224.

Bertalanffy, L. von. (1968). *General system theory: Foundations, development, and applications*. George Braziller.

Blau, P. M., & Duncan, O. D. (1967). *The American occupational structure*. Wiley.

Boserup, E. (1970). *Woman's role in economic development*. George Allen & Unwin.

Bourdieu, P. (1986). The forms of capital. In J. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241–258). Greenwood.

Brunie, A., et al. (2021). VSLA training and household resilience outcomes.

CARE International. (2022). *Village Savings and Loan Associations training and livelihoods report*.

Controller of Budget (COB). (2025). *County governments budget implementation review report*.

Cooke, B., & Kothari, U. (2001). *Participation: The new tyranny?* Zed Books.

Etikan, I., & Bala, K. (2017). Sampling and sampling methods. *Biometrics & Biostatistics International Journal*.

FAO. (2022). *The state of food security and nutrition in the world*.

FAO. (2023). *The state of food security and nutrition in the world 2023*.

Gabriel, A. O. I. (2010). *Theoretical framework and research studies*.

Girmay, T., et al. (2023). Prenatal healthcare affordability and antenatal care uptake in Ethiopia.

Government of Kenya. (2023). *Facilities Improvement Financing Act No. 14 of 2023*.

Habimana, J., et al. (2022). Respectful maternity care and antenatal attendance in Rwanda.

IFAD. (2023). *Community participation and livelihood development report*.

Ijhsr. (2019). Labour and delivery services and maternal health outcomes.

Irwan, I., et al. (2022). Own source revenue financing and public service delivery.

Jhpiego. (2023). *Maternal and newborn health innovations in Makueni County*.

Kabiru, P., & Mutua, J. (2022). Prenatal health education and maternal wellbeing.

Kimaku, D. M., Muturi, W., & Wanjau, K. (2021). Effect of capital structure on financial performance of savings and credit cooperative societies in Kenya. *International Journal of Finance and Accounting, 6*(1), 14–25.

Kimani, E., Njeri, W., & Mwangi, P. (2023). Utilization of maternal healthcare services in Kenya: Impact of national maternal health programs. *African Journal of Reproductive Health, 27*(1), 32–41.

KNBS. (2023). *Kenya National Bureau of Statistics economic survey*.

KNHA. (2019, 2024). *Kenya National Health Accounts reports*.

Kombo, D. K., & Tromp, D. L. A. (2006). *Proposal and thesis writing: An introduction*. Paulines Publications Africa.

Kothari, C. R. (2004). *Research methodology: Methods and techniques* (2nd ed.). New Age International.

KPMG Africa. (2019). *Healthcare budget analysis*.

Ksoll, C., et al. (2021). Savings groups, training, and household resilience in Uganda.

Kuhnt, J., & Vollmer, S. (2019). Prenatal care services and maternal health outcomes.

Kulwa, K., Msuya, S., & Shayo, A. (2021). Improving hygiene and maternal health outcomes in Tanzania. *BMC Public Health, 21*(1), 310–320.

Kumar, S. (2018). *Methods for community participation: A complete guide for practitioners*.

Kwak, S. G., & Park, S. H. (2019). Normality test in statistical analysis. *Journal of the Korean Association of Oral and Maxillofacial Surgeons, 45*(1), 13–21. https://doi.org/10.5125/jkaoms.2019.45.1.13

Kyalo, K. M. (2013). *Public health expenditure and health outcomes in Kenya* (Unpublished master's project). Kenyatta University.

Lazaroiu, G. (2015). The role of Maslow's hierarchy of needs in organizational culture. *Psychosociological Issues in Human Resource Management, 3*(2), 61–66.

Levitas, R., Pantazis, C., Fahmy, E., Gordon, D., Lloyd, E., & Patsios, D. (2007). *The multi-dimensional analysis of social exclusion*. Department for Communities and Local Government.

Lipton, M., & Ravallion, M. (1995). Poverty and policy. In J. Behrman & T. N. Srinivasan (Eds.), *Handbook of development economics* (Vol. 3, pp. 2551–2657). Elsevier.

Maina, J., Waweru, E., & Mutiso, L. (2025). Integrated environmental and maternal health interventions in Kenya. *Health Policy and Planning, 40*(2), 98–108.

Makueni County Health Department. (2025). *Annual health records report*.

Makueni County Health Department. (2025). *Annual maternal and child health service utilization summary report*.

Makueni County. (2022). *Maternal and child health annual report*.

Makueni County. (2025). *County fiscal strategy paper 2025*.

Martinez, L., & Chen, H. (2024). Advanced statistical software in social science research. *Digital Research Tools Quarterly, 12*(1), 45–60.

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review, 50*(4), 370–396.

Maslow, A. H. (1987). *Motivation and personality* (3rd ed.). Harper & Row.

Meyer, P., Smith, J., & Delgado, R. (2024). Using regression models for health service evaluation. *Health Services Research Review, 18*(1), 55–70.

Meyer, T., Kamau, N., & Njoroge, B. (2024). Regression models in health systems research. *African Journal of Applied Statistics, 8*(1), 44–59.

Moges, W., Seyoum, A., Mitiku, A. A., Zewotir, T., Hailemeskel, S., & Tesfahun, E. (2023).

Moser, C. O. N. (1993). *Gender planning and development: Theory, practice and training*. Routledge.

Muriuki, J., et al. (2024). Antenatal follow-up and maternal health outcomes in Kenya.

Mutai, J., et al. (2024). Telemedicine and continuity of prenatal care in Kenya.

Mutiso, L., et al. (2023). Psychosocial support and birth preparedness among pregnant women in Kenya.

Nakimuli, A., et al. (2022). Availability of medicines and prenatal healthcare utilization in Uganda.

Ngotie, P., et al. (2022). Maternal and newborn healthcare service quality.

Ngugi, J., et al. (2023). Continuum of maternal healthcare and maternal wellbeing.

Njuki, J., et al. (2021). Gender participation and livelihood outcomes.

Oduor, P., & Onyango, R. (2022). Gender constraints in VSLA participation in Kenya.

Omondi, D., et al. (2023). Prenatal care utilization and pregnancy outcomes in Sub-Saharan Africa.

Otieno, D. (2020). County financing and maternal health outcomes in Kenya.

Pretty, J. (1995). Participatory learning for sustainable agriculture. *World Development, 23*(8), 1247–1263.

Putri, A., & Lu, Y. (2024). Maternal health literacy and maternal wellbeing.

Rathgeber, E. M. (1990). WID, WAD, GAD: Trends in research and practice. *The Journal of Developing Areas, 24*(4), 489–502.

Taherdoost, H. (2020). Sampling methods in research methodology.

Teshale, A., et al. (2025). Skilled birth attendance and maternal experiences during childbirth.

UN Women. (2023). *Gender equality and economic empowerment report.*

UNICEF. (2025). *Maternal and child wellbeing report.*

Wanjiku, P., et al. (2024). Health infrastructure investments and prenatal screening coverage in Kenya.

Weber, M. (1947). *The theory of social and economic organization*. Free Press.

WHO. (2023). *WHO recommendations on antenatal care, intrapartum care, postnatal care and maternal health.*

World Vision Kenya. (2023). *Gender-responsive VSLA training and household welfare outcomes*.

Yamane, T. (1967). *Statistics: An introductory analysis* (2nd ed.). Harper & Row.