

**West Africa  
Spatial Analysis Prototype  
Exploratory Analysis**

**The Effect of Settlement Zones and  
Economic Diversity on Reproductive  
Behavior in West Africa**

**Demographic and Health Surveys  
Macro International Inc.**



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**The Effect of Settlement Zones and Economic Diversity on Reproductive  
Behavior in West Africa**

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**September 1998**

**The paper is one of a series of exploratory analyses conducted under the West Africa Spatial Analysis Prototype (WASAP) Project. Funding for this project was provided by the United States Agency for International Development's Regional Economic Development Services Office for West and Central Africa. The author is grateful to Mian Hossain for producing the tables for this report.**

## **Introduction**

The demographic transition model of fertility decline proposes that changes in macro-developmental variables – industrialization, urbanization, popularization of education – result in functional differentiation of family and non-family institutions, greater division of labor, and greater integration of local communities into the larger society. These changes in social structure influence fertility behavior via two mechanisms: the cost of contraception and the demand for additional children. Although individual characteristics are recognized as the most important proximate determinants of childbearing decisions, the socioeconomic environment “sets the stage” and many personal and household characteristics that may directly affect reproductive behavior. Thus, the study of human reproductive behavior would be best approached within the context of a general theory of socioeconomic change that not only anticipates levels and directions of change in socioeconomic structure but also considers how such change may influence individual decisions, especially those related to fertility behavior.

Most of the research on demographic transition theory has affirmed the implicit assumption of an inverse association between socio-economic development and fertility. Freedman (1961) argued that structural developments such as agricultural modernization, industrial development, international trade policy, changes in values and the development of new norms that had a negative impact on fertility were the outcome of the economic development process.

The goal of this study is to measure the relationship between reproductive behavior and settlement zones and economic diversity in twelve countries (Benin, Burkina Faso, Cameroon, Central African Republic, Cote d'Ivoire, Ghana, Liberia, Mali, Niger, Nigeria, Senegal and Togo). The purpose of this study is to test the proposition that settlement zone, as measured by the rate of urbanization and the extent to which town and rural areas have become integrated, and economic diversity, as measured by the number of different economic sectors operating in each administrative units, affect reproductive behaviors, such as knowledge of family planning, use of family planning methods, and demand for family planning.

## **Data and Methods**

The increase in the availability of appropriate demographic data from cross-sectional research and the development of statistical techniques have allowed researchers to undertake studies which utilize a combination of micro and macro level data within a single framework. A large amount of data has been collected in West Africa in a variety of sectors and by different organizations but analytical efforts are not integrated for utilization of regional planning.

This analysis utilizes data from the West Africa Spatial Analysis Prototype (WASAP) database. WASAP brings together data sets from a number of sources. All of the data sets in WASAP are geocoded and linked spatially through WASAP using ArcView (ESRI; 1996). The data used are from two sources; Demographic and Health Surveys (DHS)

conducted in West Africa between 1988 and 1996, and the West Africa Long Term Perspective Study database (WALTPS). Data on family planning information for women 15-49 years of age are used from the DHS, which is a national sample survey designed to provide information on fertility, family planning, and health. Table 1 presents the sample details for DHS surveys in West Africa.

One way to represent and analyze the DHS indicators (e.g., family planning behavior) is to develop aggregated statistics for a given variable relative to some geographic characterization, or geographic construct. The geographic construct could be national or sub-regional boundaries or some other spatial analysis layer, such as in this analysis, where settlement zone and economic diversity are used. The WALTPS data were linked spatially to the DHS clusters in WASAP to produce a cluster-level data file. Settlement zones and economic diversity appear spatially as a series of contours so the clusters were the assigned the value of settlement zones and economic diversity for the contour in which they lay.

The structural development variables included in the study are the settlement zones and economic diversity and obtained from WALTPS. WALTPS was a long term assessment of the economic geography of West Africa conducted by the Club du Sahel and the African Development Bank in 1992-94 (Brunner et al, 1995).

The DHS data<sup>1</sup> in the WASAP database are aggregated to the cluster level and various demographic and health indicators (including family planning variables) can then be calculated for each cluster. Each cluster contains approximately 30 households and the cluster-level indicators can then be aggregated to higher levels (e.g., sub-regions within a country).

Table 1: Sample details for Demographic and Health Surveys in West Africa

Country	Year of Survey	Number of women age 15-49	Number of clusters
Benin	1996	5,491	200
Burkina Faso	1992/93	6,354	230
Cameroon	1991	3,871	149
Central Africa Republic	1994/95	5,884	231
Cote d'Ivoire	1994	8,099	246
Ghana	1993	4,562	400
Liberia	1986	5,239	156
Mali	1995/96	9,704	300
Niger	1992	6,503	235
Nigeria	1990	8,781	298
Senegal	1992/93	6,310	258
Togo	1988	3,360	153
Total	1986-1996	74,158	2,856

<sup>1</sup> The DHS sample is selected in two stages. In the first stage, the Enumeration Areas (EAs) are selected with probability proportional to size. Then within each selected EA, a complete household listing is carried out from which a number of households is chosen at random. The number of households chosen is proportional to the population of the EA. The sampled EAs are known as clusters. The present study uses 2,856 clusters, out of which 1,341 are urban and 1,515 rural.

## ***Reproductive Behavior***

The link between individual (micro) and contextual (macro) level influences on fertility, explained by Davis and Blake (1956) and reintroduced by Bongaarts and Potter (1983) and Easterlin and Crimmins (1985) theorize that fertility is determined by a set of biological and behavioral factors (such as age at marriage, contraception, and breastfeeding) which are indirectly affected by socio-economic, cultural and environmental variables.

The following reproductive behavior indicators were used in this analysis (Table 2 gives the levels of selected indicators in each of our countries).

- Percentage of currently married women who know any modern family planning method.
- Percentage of currently married women who know of specific family planning methods.
- Mean number of modern family planning methods known by currently married women.
- Percentage of currently married women who have ever used any modern method.
- Percentage of currently married women who have ever used specific family planning methods.
- Percentage of currently married women who are currently using any family planning method.
- Percentage of currently married women who are currently using any modern family planning method.
- Percentage of currently married women who are currently using a specific family planning method.
- Percentage of currently married women with an unmet need<sup>2</sup> for family planning (spacing or limiting).

## ***Settlement Zones***

Settlement zones were defined by two major factors that influence settlement pattern: a residence variable (urban – rural) and a variable representing changes in market tension. Administrative units were first classified as urban or rural. They were then classified by the increase in market tension between 1960 and 1990 into low, medium, and high growth, yielding a total of six unique settlement zones.

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<sup>2</sup> Unmet need for spacing includes pregnant women whose pregnancy was mistimed, amenorrhoeic women whose last birth was mistimed, and women who are neither pregnant nor amenorrhoeic and who are not using any method of family planning but say they want to wait two or more years for their next birth. Also included in unmet need for spacing are women who are unsure whether they want another child or who want another child but are unsure when to have the birth. Unmet need for limiting refers to pregnant women whose pregnancy was unwanted, amenorrhoeic women whose last child was unwanted, and women who are neither pregnant nor amenorrhoeic and who are not using any method of family planning but want no more children. Excluded from the unmet need category are menopausal or infecund women who have not had sexual intercourse in the four weeks before the interview.

Table 2: Reproductive Behavior in WASAP Countries

Country	Total Fertility Rate <sup>a</sup>	Currently Married Women 15-49			
		% know of any modern method	% ever used any modern method	% currently using any method	% currently using any modern method
Benin	6.3 <sup>b</sup>	76	11	16	3
Burkina Faso	6.9	63	10	8	4
Cameroon	5.8	63	15	16	4
Central Africa Republic	5.1	69	11	15	3
Cote d'Ivoire	5.7 <sup>b</sup>	72	20	11	4
Ghana	5.5 <sup>b</sup>	91	32	20	10
Liberia	6.7	68	16	6	6
Mali	6.7	65	12	7	5
Niger	7.4 <sup>c</sup>	58	4	4	2
Nigeria	6.0	41	8	6	4
Senegal	6.0	70	11	7	5
Togo	6.4	81	10	12	3

<sup>a</sup> Based on 3 years preceding the survey (women 15-49).

<sup>b</sup> Based on 5 years preceding the survey.

<sup>c</sup> Based on 6 years preceding the survey.

Market tension, an indicator of the economic impact of urban and international markets on rural areas, is a synthetic measure of the extent to which areas are connected economically to markets. It is based on soils, climate, and the ability to reach markets, which in turn depends on the distance to those markets and the quality of the road system to the market. Market tension increases with the proximity to a market and the size of demand from a market. Areas with high quality soils, favorable climate and good access to markets have high market tension whereas areas without these qualities have low market tension. A detailed explanation of market tension is given in Brunner et al (1995).

Growth in market tension was the difference between market tension in 1960 and 1990. For each administrative unit, the average change in market tension is calculated using the relative area as a weight for each category. These averages were then grouped into three categories:

- Very low growth - average unit area increase was less than one category
- Low growth - average unit area increase between 1 and 2 categories
- High growth - average unit area increase of more than two categories.

The residence variables, urban and rural (taken from the DHS), and the changes in market tension variable were then combined into a single typology code representing six different settlement zones.

### ***Economic Diversity***

The purpose of the economic base typology is to classify areas by economic diversity. Economic diversity per administrative unit was measured using nine nonexclusive codes:

agriculture (very high, high, medium, and low), biodiversity/tourism, forest, mining, other, and service. Economic activity was defined by the spatial extent or location of these activities in the administrative unit area. The category other is defined as having less than 2 percent of the administrative unit under cultivation, no major mining activities, no protected areas, and no large forests. Administrative units that contain a mine, pipeline, or gas field are classified as mining. Units covered by more than 50 percent tropical moist forest are classified as forest. Units more than 20 percent under protection are classified as biodiversity/tourism. Agricultural units are classified according to the percentage under cultivation. Urban areas are defined a priori as service units.

In the final step, economic diversity per administrative unit was then classified by whether the unit has 1, 2, or 3 or more economic sectors. All units that were assigned only a single economic activity were classified as units with a single dominant sector. Those with two overlapping activity codes were categorized as having a mixed economy with two dominant sectors. All areas with three or more economic activity codes were classified as having a diversified economy. Like the settlement zones, the economic diversity variables are broken down into urban and rural areas.

Our hypothesis is that areas that enjoy strong economic ties to markets and areas of high economic diversity will have greater access to family planning, that is, will have higher knowledge and use of family planning.

## Results

Table 3 shows the results of percentage of currently married women who know of any modern family planning method, specific methods and the mean number of modern methods known by settlement zones. Knowledge of any modern method is highest for the high growth area and lowest in the very low growth area. In the very low growth urban areas, half of the women have knowledge of any modern contraceptive method in comparison to 80 percent of women in the high growth area. In rural West Africa, less than half of women in very low growth areas know of any modern family planning method in comparison to two-thirds of women in high growth areas (Figure 1).

Similarly, knowledge of specific methods is also higher in the areas where growth is high. Women living in urban areas with high growth in market tension know on average just over one more modern family planning method than urban women living in areas where growth is very low (3.2 vs. 2.0). The difference in the mean number of modern methods known between high and very low growth area is almost one method (0.8) for rural areas (Figure 2).

Information on ever use of modern family planning is presented in Table 4. Like the knowledge of family planning methods, ever use of modern family planning is higher in the high growth areas than in very low or low growth areas (Figure 3).

Table 5 presents the percentage of currently married women who are currently using a family planning method and the percentage who have unmet need for family planning by settlement type. Overall, the contraceptive prevalence rate is low in West Africa (10 percent of women are using any family planning method and only 4 percent are using a modern family planning method). Use of any contraceptive method or a modern method is higher in urban areas than in rural areas. More women are using family planning in the high growth areas than in the low or very low growth areas (Figures 4 and 5). For example, 17 percent of urban women in high growth areas are using family planning method as compared to 10 percent of urban women in the very low growth areas. However, except for the pill, method specific use differences by growth pattern do not appear to be significant.

One of the concerns of family planning programs is to estimate the number of women who are in need of services as well as the potential demand for services. About one-quarter of currently married women in West Africa have an unmet need for family planning services. Unmet need is higher for women living in high growth areas than for women living in very low growth areas (Figure 6).

Tables 6-8 show the relationship between economic diversity (note that there is no single dominant sector in the urban area) and different indicators of reproductive behavior. There are significant differences in contraceptive knowledge among women living in areas with different levels of economic diversity. For example, half of women know of any family planning method in the rural areas where the economy depends on a single sector compared to three-fourths of rural women in diversified economic areas (Table 6 and Figure 7). The mean number of modern methods known increases as economic diversity increases (Figure 8). Ever use of a contraceptive method is also higher in areas with greater economic diversity (Table 7, Figure 9). Ever use of a modern contraceptive method in rural West Africa is more than three times higher in diversified economic areas than in areas with a single dominant economic sector. Eighteen percent of women are currently using a family planning method in urban areas where the economy is diversified, compared to 13 percent of urban women in mixed economy areas (Table 8 and Figure 10). Family Planning use increases with economic diversity (at least two sectors). However, unmet need for family planning is higher in the diversified economic areas (Figure 12).

## **Conclusions**

*This study has focused on the effect of settlement zone and economic diversity on the reproductive behavior of the West African women. Moreover, the measurement, description and explanation of the individual and contextual levels and the link between two levels of analysis has been attempted to examine the relationship among proximate determinants of fertility such as contraceptive use and macro development variables.*

The problem with examining the potential effect of structural development is that structural development variables are measured at a level that is too highly aggregated, too large to represent a meaningful concept of context. Another issue is the appropriate time

frame for the dependent and explanatory variables. Contextual conditions change over time, particularly if the area is undergoing rapid economic development and social changes. The variation in the dates of the surveys presents another problem. The gap between the earliest survey (Liberia, 1986) and the latest survey (Benin, 1996) is ten years, although two-thirds of the surveys were completed in a 5 year period between 1992 and 1996. Some of the countries included in this study may have experienced an increase in contraceptive use over time.

Despite the above problems, this analysis found some interesting results. Knowledge of any family planning method and knowledge of a modern method is highest in high growth areas and lowest in very low growth areas. This trend was found both in urban and rural areas. In addition, the overall knowledge of contraception is higher in urban areas than in rural areas. For each of the contraceptive methods, there is a positive effect of growth in market tension on knowledge. This supports our hypothesis that women living in the area with strong economic ties to market will have higher knowledge of family planning.

Women living in areas where the change in market tension was high are more likely to be using family planning than women living in areas where the change in market tension is very low or low. Within each category of contraceptive method, there is a clear variation among the indicators as a function of change on market tension. However, unmet need for family planning is positively correlated with the change in market tension, explains the higher demand in the high growth areas.

Another pattern of variability is observed between family planning knowledge and the differences in economic diversity. Our results show that in areas of high economic diversity, knowledge and use of family planning is higher than in areas where the economy is dependent on a single sector. The relationship of contraceptive knowledge and use to economic diversity suggests that economic development especially industrialization in West Africa is likely, to have demographic implications.

The relationship between structural development and reproductive behavior has not been widely studied because few non-DHS variables are available in WASAP that are relevant for the analysis of fertility or family planning method use. As more georeferenced datasets that include variables such as availability and accessibility of family planning services, income and expenditure become available, the potential for linking datasets to the DHS to expand fertility analysis will increase.

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## Tables

Table 3 : Percentage of Currently Married Women aged 15-49 who Know Selected Contraceptive Methods by Settlement Zones.

Knowledge of Method	Urban				Rural				Total
	Very low growth	Low growth	High growth	Total	Very low growth	Low growth	High growth	Total	
Percentage of currently married women aged 15-49 who know any modern method	50.4	62.8	79.7	62.4	44.8	54.9	66.8	52.6	56.4
Percentage of currently married women aged 15-49 who know of the pill	45.2	51.4	67.4	52.2	35.8	43.9	54.4	42.2	46.0
Percentage of currently married women aged 15-49 who know of the IUD	29.2	34.6	43.8	34.7	19.5	22.8	25.3	21.9	26.8
Percentage of currently married women aged 15-49 who know of the injections or Norplant	38.9	51.0	61.1	49.7	30.8	40.3	48.3	37.8	42.4
Percentage of currently married women aged 15-49 who know of the diaphragm/jelly/foaming tablets	18.4	22.8	28.2	22.6	12.3	14.3	14.7	13.6	17.1
Percentage of currently married women aged 15-49 who know of condoms	34.7	43.9	59.1	43.9	24.9	31.5	48.6	31.4	36.2
Percentage of currently married women aged 15-49 who know of the female or male sterilization	34.3	36.2	57.9	38.7	28.8	32.7	40.5	32.3	34.8
Mean number of modern method known by currently married women	2.0	2.4	3.2	2.4	1.5	1.9	2.3	1.8	2.0

Table 4: Percentage of Currently Married Women aged 15-49 who Ever Used Selected Contraceptive Methods by Settlement Zones.

Ever Use of Contraceptive Methods	Urban				Rural				Total
	Very low growth	Low growth	High growth	Total	Very low growth	Low growth	High growth	Total	
Percentage of currently married women who ever used any modern method	14.6	18.3	20.9	17.8	6.2	9.0	12.8	8.5	12.1
Percentage of currently married women aged 15-49 who ever used the pill	8.6	10.2	12.7	10.2	3.5	5.2	7.4	4.9	6.9
Percentage of currently married women aged 15-49 who ever used the IUD	2.4	2.9	2.4	2.8	0.6	1.2	0.7	0.9	1.6
Percentage of currently married women aged 15-49 who ever used injections or Norplant	1.8	3.1	2.8	2.8	1.1	1.6	2.1	1.5	2.0
Percentage of currently married women aged 15-49 who ever used the diaphragm/ jelly/foaming tablets	3.1	2.7	2.8	2.8	1.1	1.0	1.3	1.1	1.8
Percentage of currently married women aged 15-49 who ever used condoms	5.8	6.2	8.0	6.3	1.9	2.7	5.2	2.8	4.1
Percentage of currently married women aged 15-49 who ever used female or male sterilization	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.5

Table 5: Percentage of Currently Married Women aged 15-49 who are Currently Using Selected Contraceptive Methods by Settlement Zones and Percentage of Currently Married Women aged 15-49 who have an Unmet Need for Family Planning.

Current Use of Contraceptive Methods	Urban				Rural				Total
	Very low growth	Low growth	High growth	Total	Very low growth	Low growth	High growth	Total	
Percentage of currently married women aged 15-49 who are currently using any method	10.4	14.2	16.7	13.7	7.1	7.8	8.0	7.6	9.9
Percentage of currently married women who are currently using any modern method	4.6	6.8	7.7	6.4	2.2	3.4	3.7	3.0	4.3
Percentage of currently married women aged 15-49 who are currently using the pill	1.4	2.6	3.9	2.5	0.7	1.3	1.8	1.2	1.7
Percentage of currently married women aged 15-49 who are currently using the IUD	1.0	1.5	0.9	1.3	0.2	0.3	0.3	0.3	0.7
Percentage of currently married women aged 15-49 who are currently using injections or Norplant	0.6	1.0	0.8	0.9	0.4	0.7	0.5	0.6	0.7
Percentage of currently married women aged 15-49 who are currently using the diaphragm/ jelly/foaming tablets	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2
Percentage of currently married women aged 15-49 who are currently using condoms	0.8	0.9	1.4	0.9	0.3	0.5	0.5	0.4	0.6
Percentage of currently married women aged 15-49 who are currently using female or male sterilization	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.4	0.4
Percentage of currently married women aged 15-49 with an unmet need for spacing or limiting	19.1	24.6	28.9	24.0	22.5	23.5	26.8	23.6	23.7

Table 6: Percentage of Currently Married Women aged 15-49 who Know Selected Contraceptive Methods by Economic Diversity.

Knowledge of Method	Urban				Rural				Total
	Single dominant sector	Mixed economy	Diversified economy	Total	Single dominant sector	Mixed economy	Diversified economy	Total	
Percentage of currently married women aged 15-49 who know any modern method	-	61.0	74.3	62.4	50.2	68.0	75.9	52.6	56.4
Percentage of currently married women aged 15-49 who know of the pill	-	50.8	62.9	52.2	40.2	54.4	63.1	42.2	46.0
Percentage of currently married women aged 15-49 who know of the IUD	-	33.9	41.3	34.7	20.8	29.5	26.5	21.9	26.8
Percentage of currently married women aged 15-49 who know of the injections or Norplant	-	48.7	58.8	49.7	36.0	48.6	58.4	37.8	42.4
Percentage of currently married women aged 15-49 who know of the diaphragm/jelly/foaming tablets	-	22.1	26.1	22.6	12.2	21.1	36.4	13.6	17.1
Percentage of currently married women aged 15-49 who know of condoms	-	43.0	51.7	43.9	28.8	46.2	63.5	31.4	36.2
Percentage of currently married women aged 15-49 who know of female or male sterilization	-	37.2	51.3	38.7	30.5	44.5	46.8	32.3	34.8
Mean number of modern method known by currently married women	-	2.4	2.9	2.4	1.7	2.4	3.0	1.8	2.0

Table 7: Percentage of Currently Married Women aged 15-49 who Ever Used of Selected Contraceptive Methods By Economic Diversity.

Ever Use of Contraceptive Method	Urban				Rural				Total
	Single dominant sector	Mixed economy	Diversified economy	Total	Single dominant sector	Mixed economy	Diversified economy	Total	
Percentage of currently married women who ever used any modern method	-	17.6	19.6	17.8	7.1	16.8	23.0	8.5	12.1
Percentage of currently married women aged 15-49 who ever used the pill	-	9.8	12.9	10.2	4.0	10.4	13.5	4.9	6.9
Percentage of currently married women aged 15-49 who ever used the IUD	-	2.8	2.5	2.8	0.7	2.3	1.1	0.9	1.6
Percentage of currently married women aged 15-49 who ever used injections or Norplant	-	2.8	3.4	2.8	1.4	2.1	3.5	1.5	2.0
Percentage of currently married women aged 15-49 who ever used the diaphragm/ jelly/foaming tablets	-	2.8	3.1	2.8	0.8	2.6	7.2	1.1	1.8
Percentage of currently married women aged 15-49 who ever used condoms	-	6.3	6.7	6.3	2.3	5.8	7.8	2.8	4.1
Percentage of currently married women aged 15-49 who ever used female or male sterilization	-	0.5	0.8	0.5	0.4	0.5	0.6	0.4	0.5

Table 8: Percentage of Currently Married Women aged 15-49 who are Currently using Contraceptive Method and Percentage of Currently Married Women aged 15-49 who have an Unmet Need for Family Planning.

Current Use of Contraceptive Methods	Urban				Rural				Total
	Single dominant sector	Mixed economy	Diversified economy	Total	Single dominant sector	Mixed economy	Diversified economy	Total	
Percentage of currently married women aged 15-49 who are currently using any method	-	13.2	17.6	13.7	6.8	12.3	13.9	7.6	9.9
Percentage of currently married women who are currently using any modern method	-	6.5	5.8	6.4	2.5	5.9	8.3	3.0	4.3
Percentage of currently married women aged 15-49 who are currently using the pill	-	2.5	2.7	2.5	1.0	2.3	3.7	1.2	1.7
Percentage of currently married women aged 15-49 who are currently using the IUD	-	1.4	0.8	1.3	0.2	1.1	0.6	0.3	0.7
Percentage of currently married women aged 15-49 who are currently using injections or Norplant	-	0.9	0.8	0.9	0.5	0.8	0.3	0.6	0.7
Percentage of currently married women aged 15-49 who are currently using the diaphragm/ jelly/foaming tablets	-	0.3	0.4	0.3	0.1	0.4	2.0	0.2	0.2
Percentage of currently married women aged 15-49 who are currently using condoms	-	1.0	0.3	0.9	0.3	1.1	1.1	0.4	0.6
Percentage of currently married women aged 15-49 who are currently using female or male sterilization	-	0.4	0.8	0.5	0.4	0.4	0.6	0.4	0.4
Percentage of currently married women with an unmet need for spacing or limiting	-	23.5	27.5	24.0	23.2	26.1	30.2	23.6	23.7

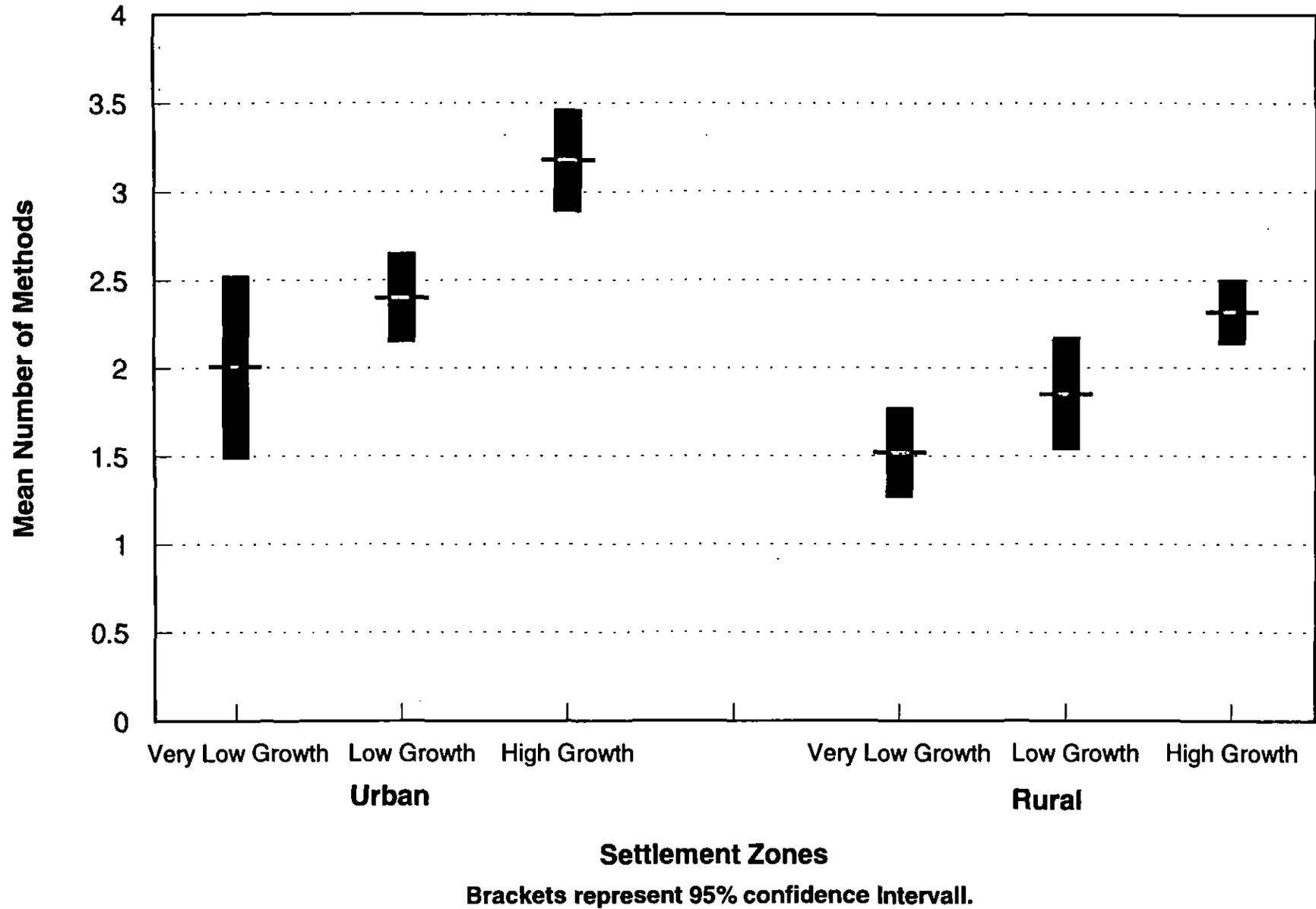
## Figures

**Figure 1: Percentage of Currently Married Women Aged 15-49 Who Know of Any Modern Method by Settlement Zones in West Africa**

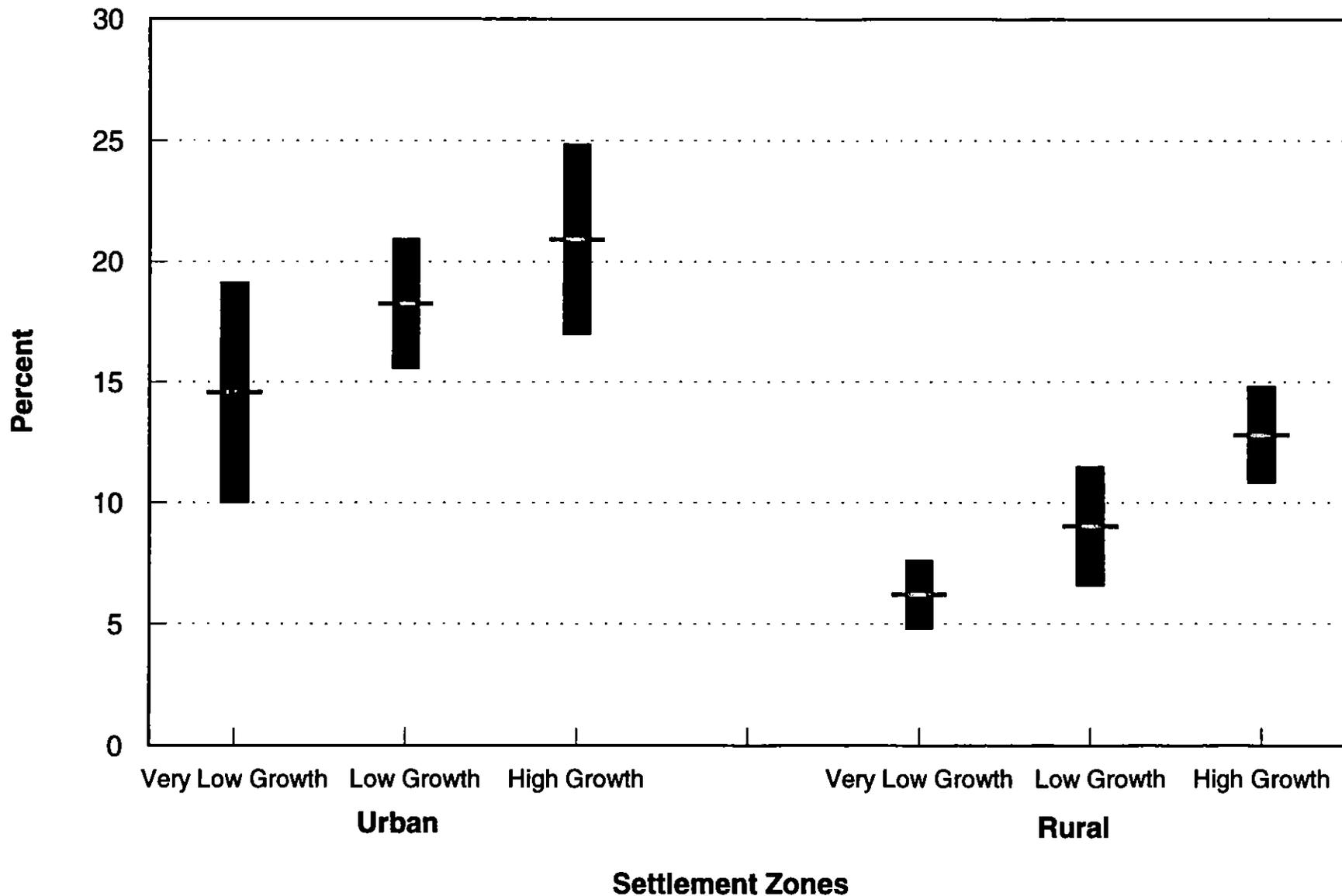


Brackets represent 95% confidence Intervall.

**Figure 2: Mean Number of Modern Methods Known by Currently Married Women Aged 15-49 by Settlement Zones in West Africa**



**Figure 3: Percentage of Currently Married Women Aged 15-49 Who Ever Used Any Modern Method by Settlement Zones in West Africa**



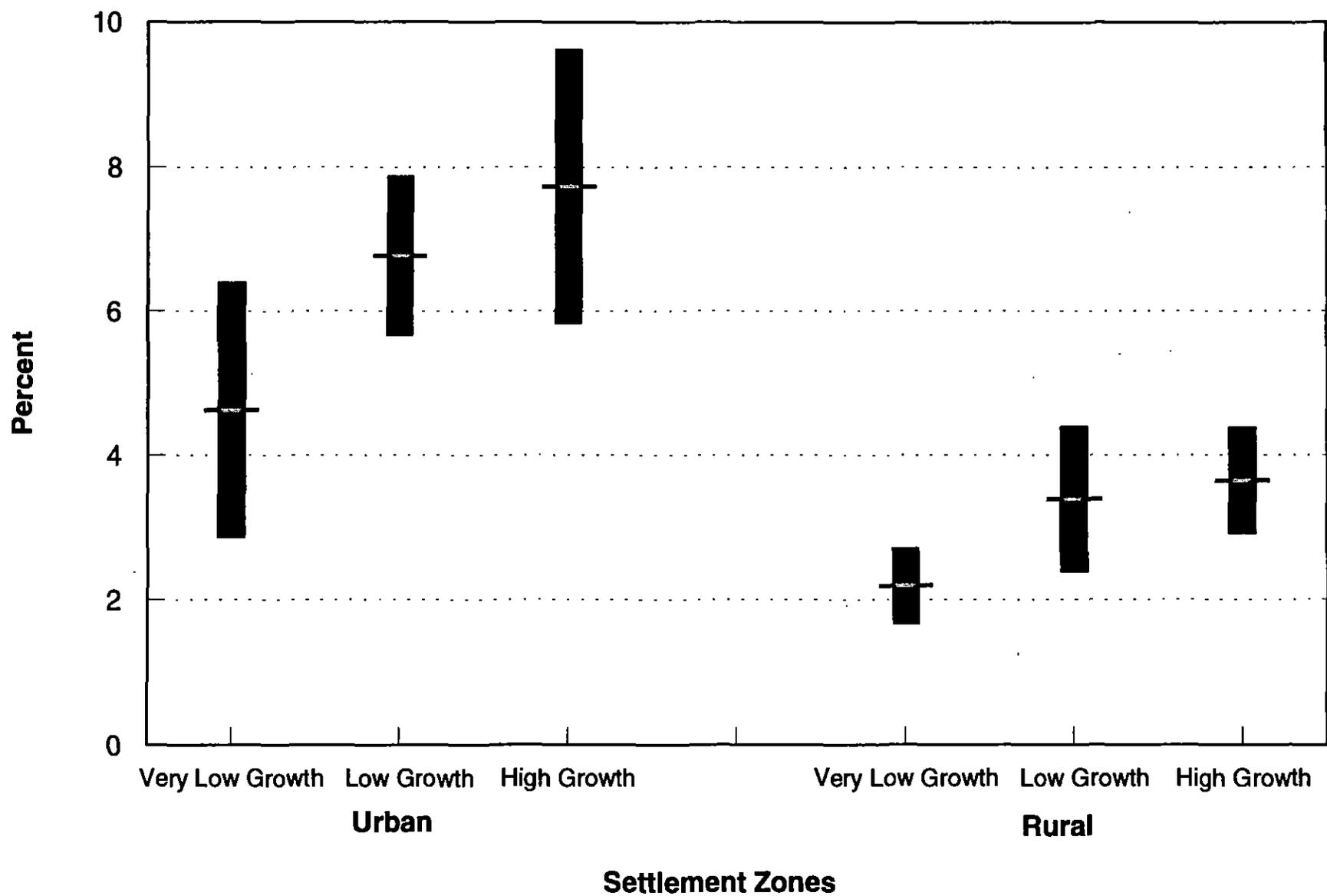
Brackets represent 95% confidence Intervall.

**Figure 4: Percentage of Currently Married Women Aged 15-49 Who are Currently Using Any Method by Settlement Zones in West Africa**



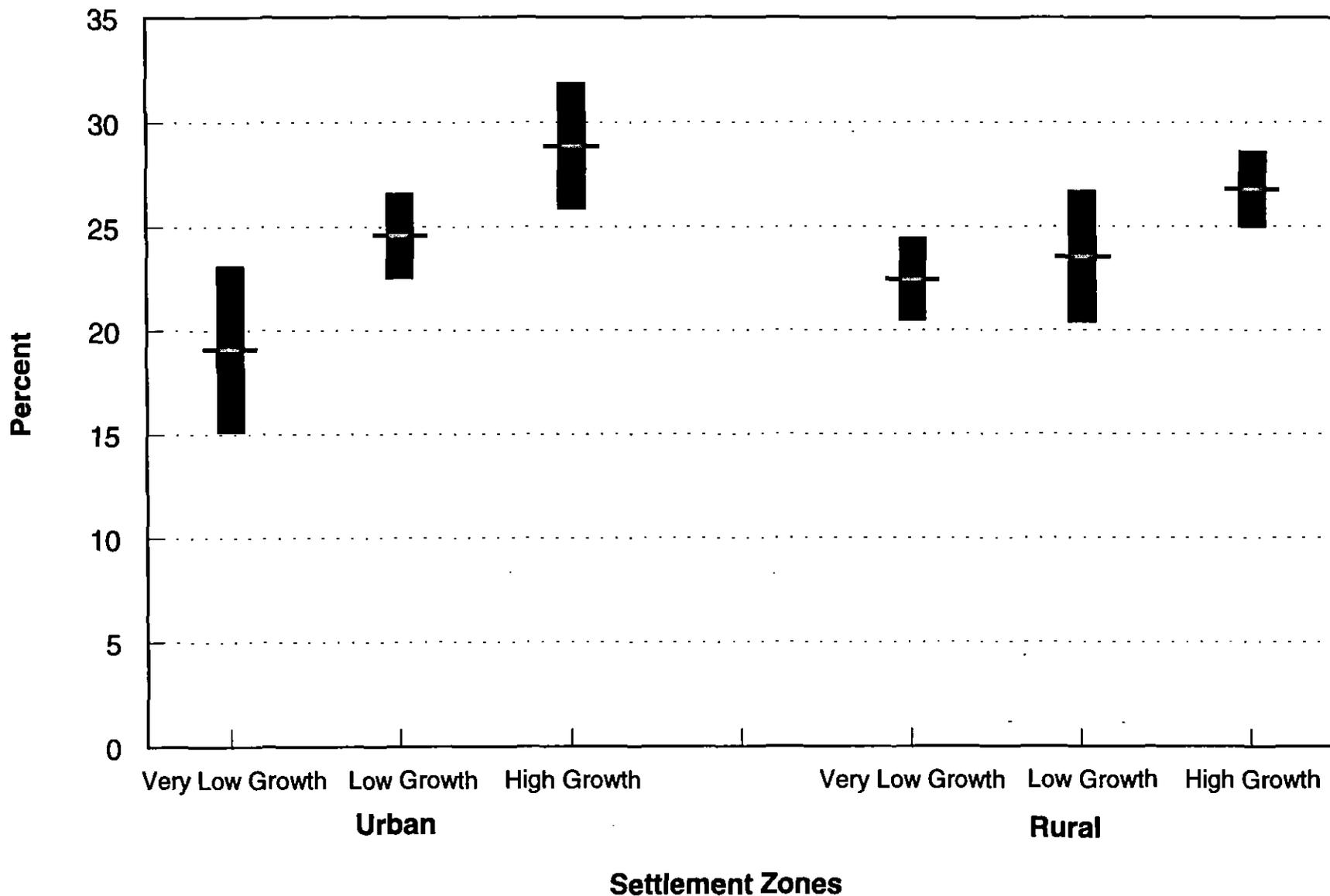
Brackets represent 95% confidence interval.

**Figure 5: Percentage of Currently Married Women Aged 15-49 Who are Currently Using Any Modern Method by Settlement Zones in West Africa**



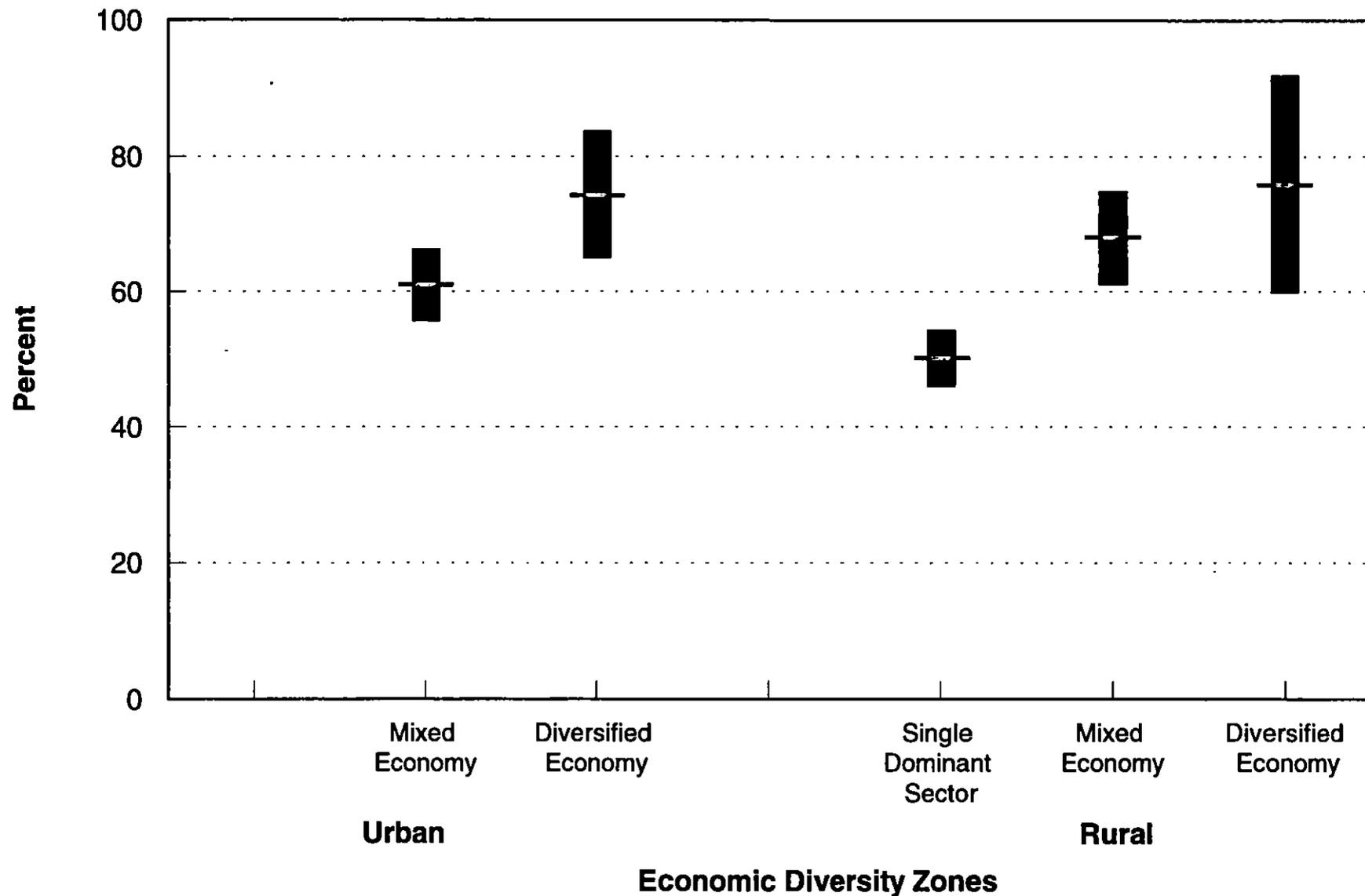
Brackets represent 95% confidence Intervall.

**Figure 6: Percentage of Currently Married Women Aged 15-49 With an Unmet Need for Family Planning (Spacing or Limiting) by Settlement Zones in West Africa**



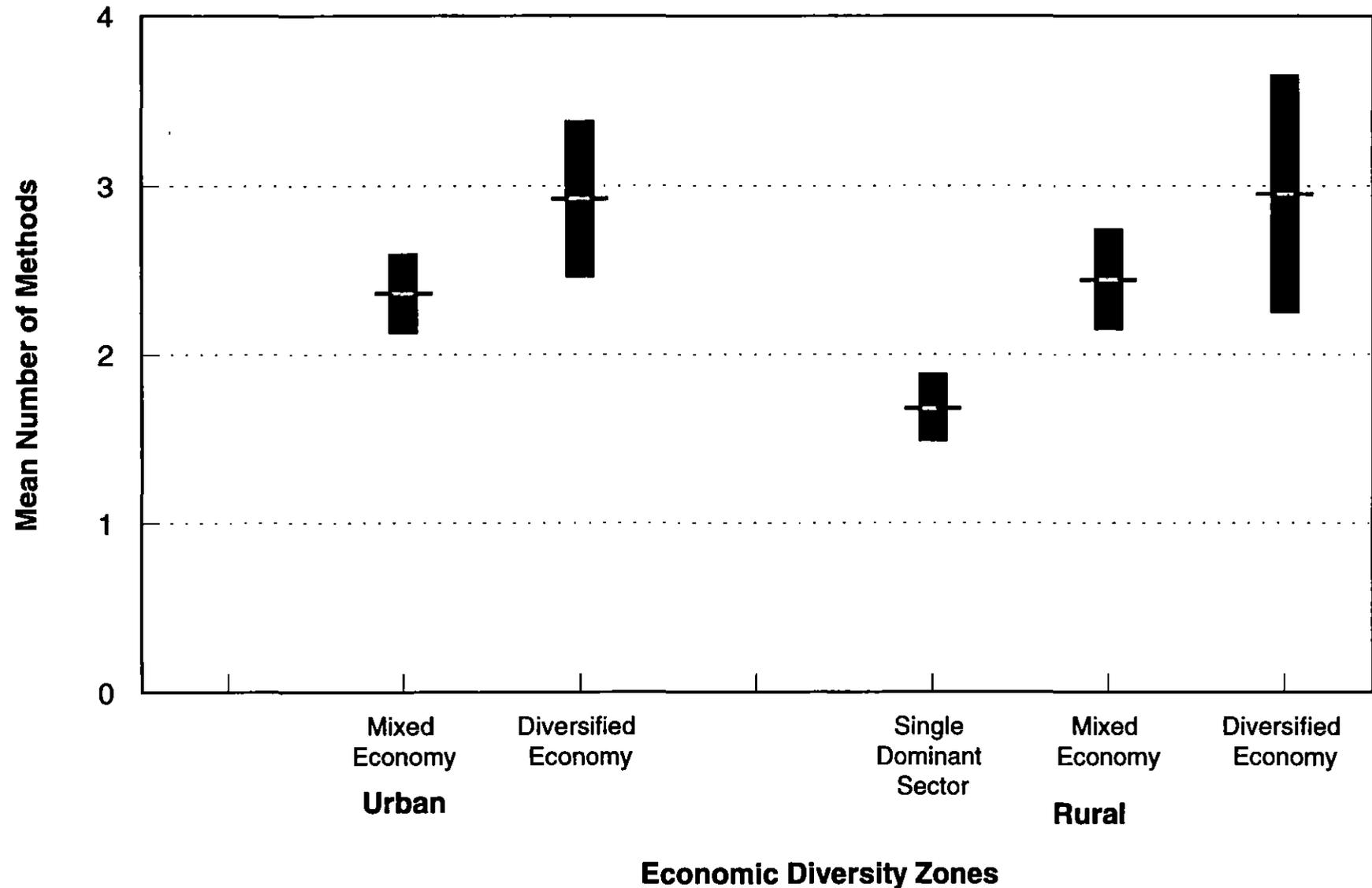
Brackets represent 95% confidence interval.

**Figure 7: Percentage of Currently Married Women Aged 15-49 Who Know Any Modern Method by Economic Diversity Zones in West Africa**



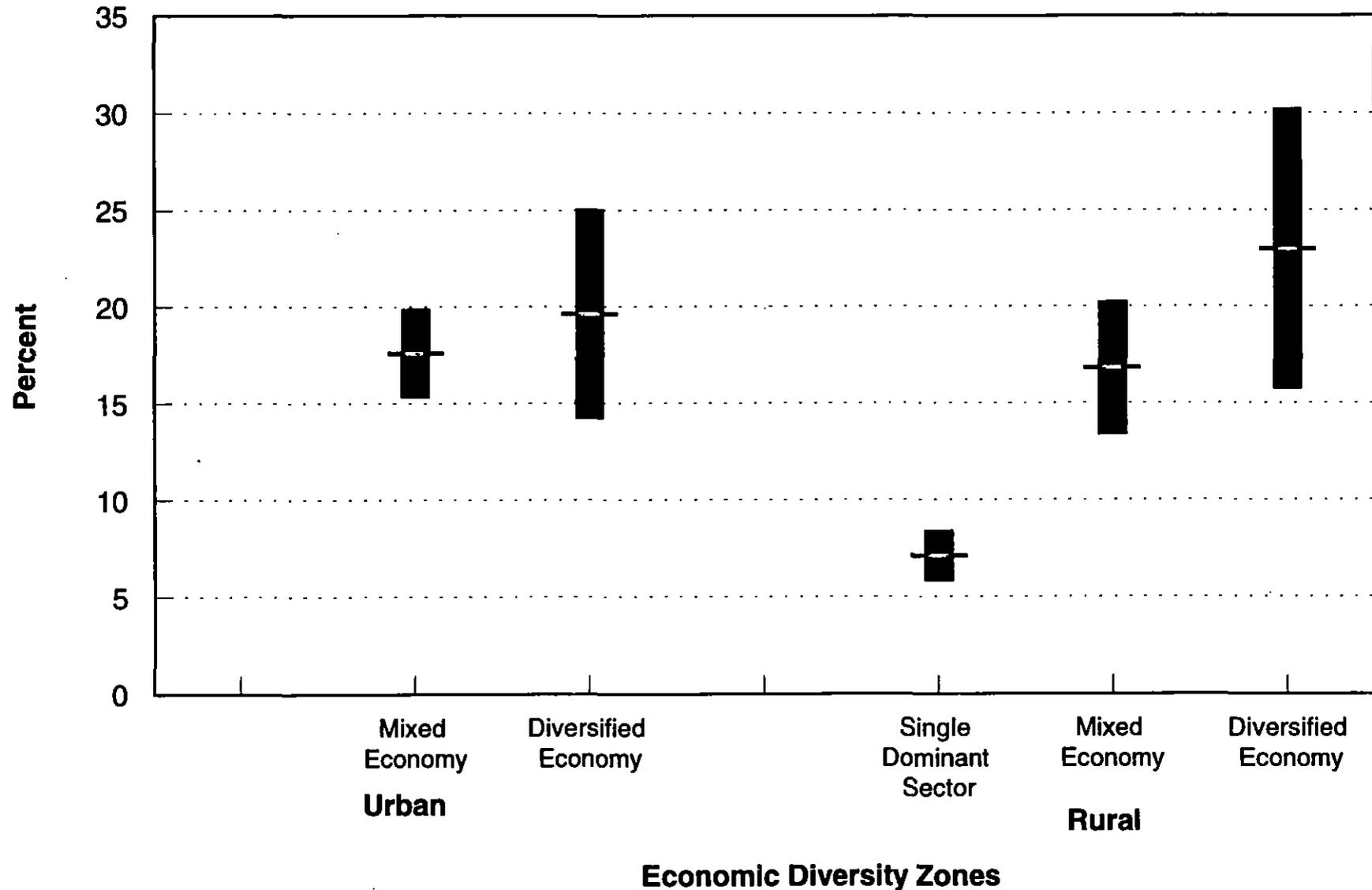
Brackets represent 95% confidence Intervall.

**Figure 8: Mean Number of Modern Methods Known by Currently Married Women Aged 15-49 by Economic Diversity Zones in West Africa**



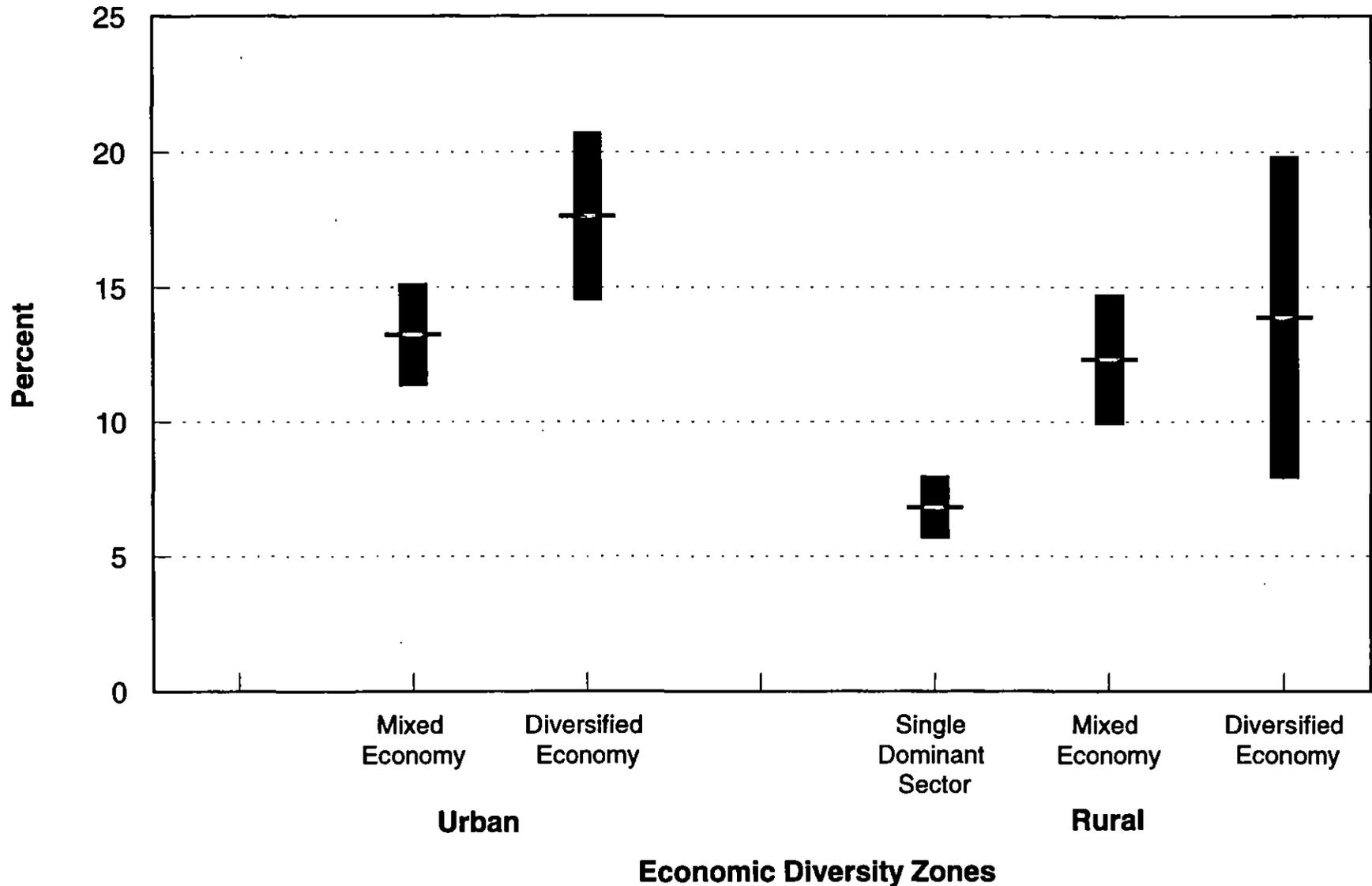
Brackets represent 95% confidence Intervall.

**Figure 9: Percentage of Currently Married Women Aged 15-49 Who Ever Used Any Modern Method by Economic Diversity Zones in West Africa**



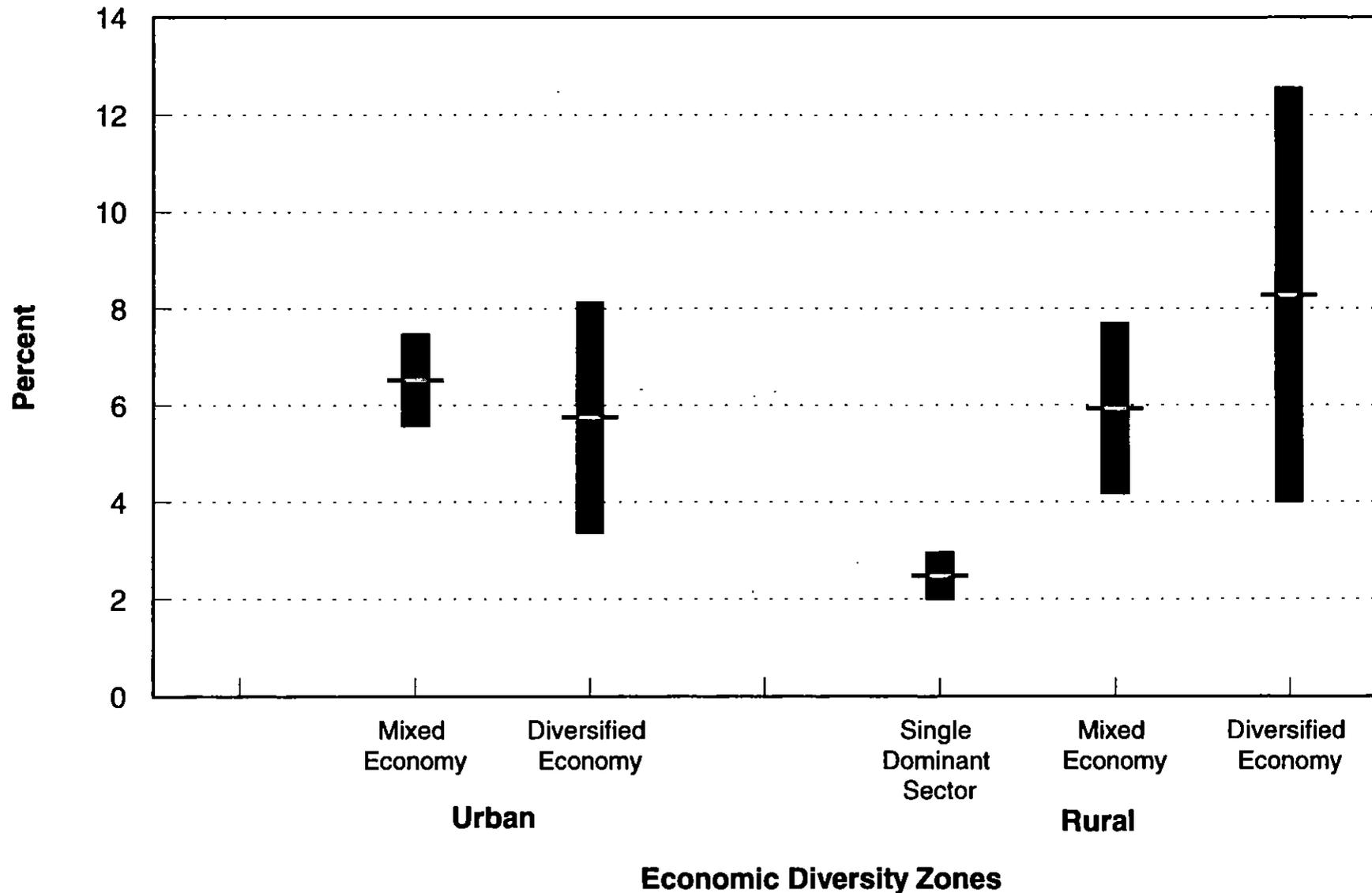
Brackets represent 95% confidence Intervall.

**Figure 10: Percentage of Currently Married Women Aged 15-49 Who are Currently Using Any Method by Economic Diversity Zones in West Africa**



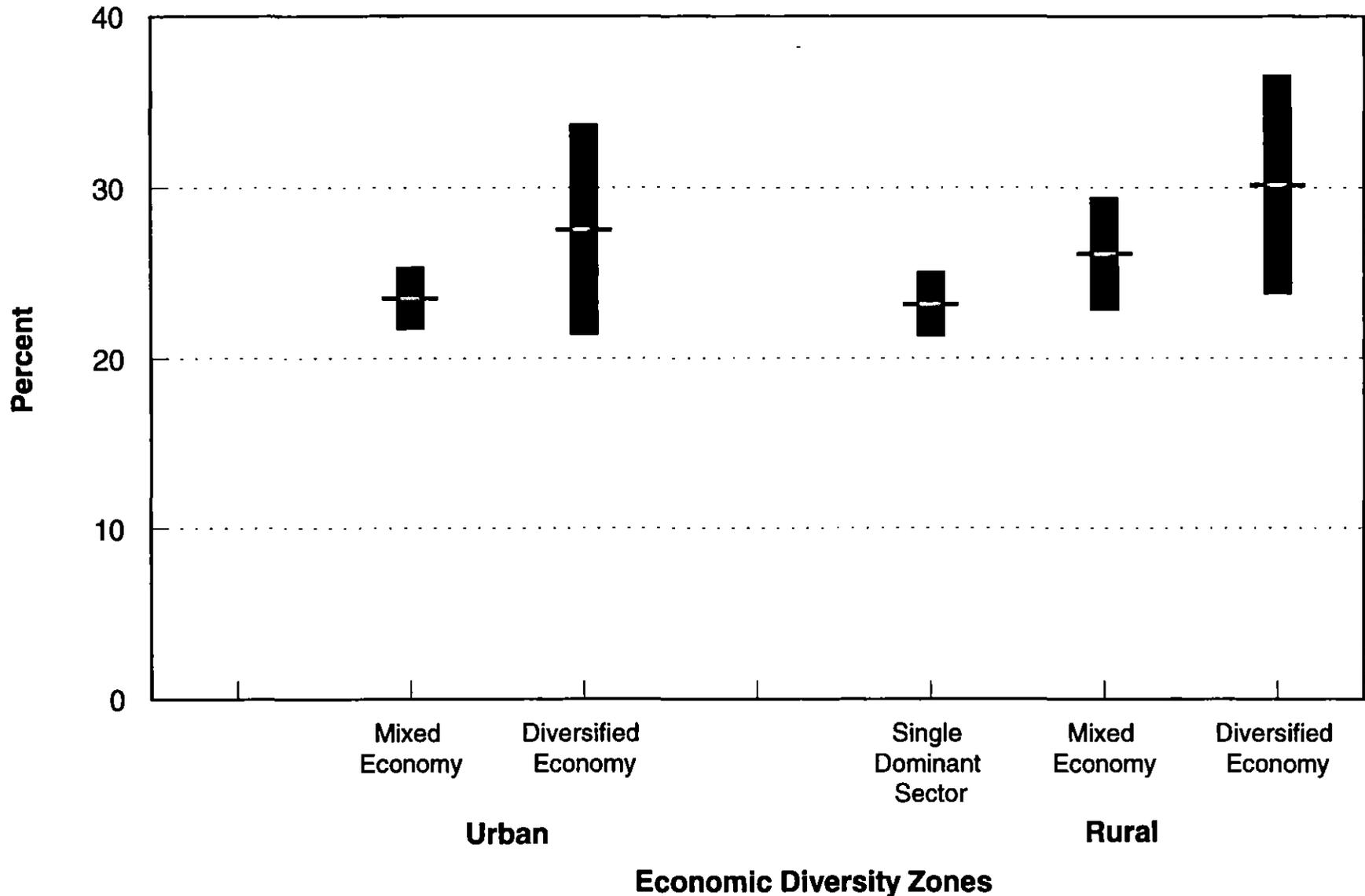
Brackets represent 95% confidence interval.

**Figure 11: Percentage of Currently Married Women Aged 15-49 Who are Currently Using Any Modern Method by Economic Diversity Zones in West Africa**



Brackets represent 95% confidence Intervall.

**Figure 12: Percentage of Currently Married Women with an Unmet Need for Family Planning (Spacing or Limiting) by Economic Diversity Zones in West Africa**



Brackets represent 95% confidence interval.