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# FINANCIAL INCLUSION IN NIGERIA: ARE WOMEN DISADVANTAGED?

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***Abstract***
*Financial inclusion is important for redistribution of economic resources. Despite the plausible effect of financial inclusion on the economy, financial institutions have failed to provide financial services to a certain group of people who are mostly women. Against this background, the study investigates whether there exist financial inclusion gap between male and female in Nigeria. This study uses secondary data from the World Bank Global Financial Inclusion database. Data obtained were analyzed using Principal Component Analysis (PCA). The findings show that males are more financially included in the first two periods but the situation changed in the final period with females being more financially included than their male counterpart. This study concludes that different financial inclusion policies focused on women have resulted in the increase in their level of financial inclusion in recent time. Therefore, it is recommended that gender-focused policies should be concentrated in order to continuously bridge the gender gap.*

***Keywords:*** *Financial inclusion; Dimensions of financial inclusion; Gender gap; Women; Nigeria*

***JEL Classification:*** *E44, J11*

## 1. INTRODUCTION

Increase availability of, access to and usage of financial products and services serves as a catalyst to inclusive economic growth and poverty reduction. This is because when people participate actively in the formal financial system, it enables them to manage risk better, increase asset ownership, start or invest in a business, and fund large expenditures such as education or home improvement (Cull, Tilman & Nina, 2014; Dupas & Robinson, 2013).

In order to ensure well inclusive financial system, Nigeria introduced law and reforms aimed at ensuring more use of the formal financial institutions and to open individuals to the dividend of financial inclusion. These reforms cover several dimensions including microfinance, credit controls, interest rate regimes, non-interest banking, mobile money, among others (Kama & Adigun, 2013). Specifically, some of the reforms include interest rate deregulation, relaxation of ownership structure of banks to allow foreign ownership, privatization of state-owned banks, implementation of Basel accords to some extent, introduction of investor and creditor protection laws, introduction of corporate governance policies among other reforms (Etudaiye-Muhtar &

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Ahmad, 2015; Murinde, 2012). Despite numerous efforts in ensuring increase in the use of formal financial system especially in the developing countries in recent years, Nigeria inclusive, there are considerable concerns that financial institutions have failed to provide financial products and services to a significant segment of the population, especially from among the women and the underprivileged (Demirguc-Kunt, Klapper, Singer, Ansar, & Hess, 2018).

Whereas, available evidence on financial inclusion gap is illustrated through the prerequisite to being financially included, i.e. account ownership. This evidence suggests that in Nigeria, only 27.1 percent of women have an account in a formal financial institution, while 51.1 percent of men have an account in a formal financial institution (World Bank, 2017). Other studies such as Demirguc-Kunt, Klapper, Singer (2013), Zins and Weill (2016) also used a univariate measure of financial inclusion. However, financial inclusion is a multidimensional concept consisting of various indicators and dimensions, therefore a single measure of financial inclusion such as account ownership may not be adequate because it is just the first step to being included (Amidžić, Massara & Mialou, 2014; Dabla-Norris, Yan, Robert, Townsend & Filiz, 2015; Sarma, 2008). Therefore, this point to the fact that establishing financial inclusion gender gap with a univariate measure as in the case of previous studies may not also be adequate, thus, the need to measure the index of both gender before establishing the gap. This study contributes to existing the literature by establishing financial inclusion gender gap from the measured index of financial inclusion for the men and women for Nigeria covering 2011, 2014 and 2017. A gender perspective is even more relevant, given that women are marginalized more often in developing countries (Nanziri, 2016). Nevertheless, an important motivation for examining Nigeria arises because of the fact that there is a dearth of research on financial inclusion gap based on an index (Mehrotra & Yetman, 2015). More so, almost half of the unbanked individuals live in seven developing countries, Nigeria inclusive (Demirguc-Kunt, *et al.*, 2018). Therefore, establishing financial inclusion gender gap may be more significant and easily evidenced in Nigeria. Thus, the main objective of this study is to determine whether financial inclusion gender gap exists in Nigeria. The rest of the study is organized as follows: Section 2 presents the review of literature. Section 3 details the methodology employed for the study. Section 4 presents results and its discussion while Section 5 concludes the paper with relevant recommendations.

## 2. LITERATURE REVIEW

### 2.1 Concept of Financial Inclusion

Increase in the use of formal financial system is important for inclusive growth of an economy. This has made it the core target for countries, especially in the developing region. The concept of financial inclusion according to the Central Bank of Nigeria [CBN] (2012), refers to easy means to access formal financial product and services, its availability and usage in an economy. It enables everyone in a country to have easy access to opening an account, access credit and continuously use the formal financial system.

In the opinion of Demiruc-Kunt and Klapper (2012) financial inclusion is a multi-dimensional concept that has different indicators and dimensions. This consist of loan and deposit accounts, accessibility of financial services and the different uses of the financial services. Emphasis was also led on mobile money which has really boosted the level of financial inclusion across the developing region, especially in Sub-Saharan Africa. The focus of financial

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inclusion is to ensure that unbanked proportion of the population is encouraged to use the formal financial institutions in order to have access to different product and services in order to benefit from the dividend of financial inclusion. Financial inclusion gap exists when a particular gender is more populated than the other.

### 2.1.1 Dimensions of Financial inclusion

Following Sarma (2008) the study used three main dimensions of financial inclusion namely; financial institution penetration, availability and usage. The first dimension which is financial institution penetration reflects the ability of the financial institutions to attract people to bank with them and the proportion of the population that is banked (Gupte, Venkataramani, Gupte, 2012). This includes the number of male with an account at formal financial institutions and number female with an account at formal financial institutions. Keeping in view the importance and contribution of mobile banking especially in Sub-Saharan Africa, number of male with mobile money account and number of female with mobile money account were included. These serve as indicators for penetration dimension for the index of financial inclusion for male and female accordingly.

The second dimension is the availability of financial institutions. This is important because just having an account is not likely to lead to inclusive financial system if the financial institutions are not available and frequently used. The indicators for this dimension include number of bank branches of commercial banks and number of Automated Teller Machine (ATM) per 100,000 adults.

The last dimension is the usage dimension. As mention earlier, to achieve an inclusive financial system frequent use of the product and services is important, as this could facilitate the easy access to the dividend of financial inclusion. This dimension is important because having an account without usage is not sufficient for an inclusive financial system (Sarma, 2012). The most frequently used indicators in this dimension are credit and deposit, this study included other indicators such as payment, remittance, use of mobile phone and internet due to their important contributions.

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**Table 1 Dimensions and Indicators Financial Inclusion for Male and Female**

| Dimensions | Indicators |
|---|---|
| **Financial Institution Penetration (DM1)** | Financial institution account, male (% age 15+) (FIFM) |
| | Mobile money account, male (% age 15+) (MMFM) |
| **Availability of Financial Institutions (DM2)** | Number of Automated Teller Machine (ATM) per 100,000 adults (ATMF) |
| | Number of bank branches of commercial banks (BBF) |
| **Usage of Financial Services (DM3)** | Saved at a financial institution, male (% age 15+) (SVFM) |
| | Borrowed from a financial institution, male (% age 15+) (BBFM) |
| | Sent or received domestic remittances in the past year, male (% age 15+) (SRFM) |
| | Made or received digital payments in the past year, male (% age 15+) (MRFM) |
| | Used a mobile phone or the internet to access an account, male (% age 15+) (MMUM) |
| **Financial Institution Penetration (DF1)** | Financial institution account, female (% age 15+) (FIFFF) |
| | Mobile money account, female (% age 15+) (MMFF) |
| **Availability of Financial Institutions (DF2)** | Number of Automated Teller Machine (ATM) per 100,000 adults (ATMF) |
| | Number of bank branches of commercial banks (BBF) |
| **Usage of Financial Services (DF3)** | Saved at a financial institution, female (% age 15+) (SVFF) |
| | Borrowed from a financial institution, female (% age 15+) (BBFF) |
| | Sent or received domestic remittances in the past year, female (% age 15+) (SRFF) |
| | Made or received digital payments in the past year, female (% age 15+) (MRFF) |
| | Used a mobile phone or the internet to access an account, female (% age 15+) (MMUF) |

**Source: Authors' Compilation (2019)**

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## 2.2 Theoretical Framework

### 2.2.1 Mckinnon-Shaw Hypothesis

The proponents of the hypothesis are Mckinnon (1973) and Shaw (1973). It suggests that in order to achieve financial sector development, financial liberalisation is important which would eventually lead to economic development. It argues that more financial saving is encouraged by increasing real interest rates which will further lead to increase in the amount of funds available for investment (Ang, 2009). Mckinnon (1973) and Shaw (1973) believes that financial repression policies results to low saving and credit rationing were widely observed due to this, amount of funds available for investment were affected, therefore, limiting the allocative efficiency function of the financial sector. Level of financial exclusion may be high in countries that rely on financial repression policies due to reduced access to external funds and different credit controls measures. Arguably, this might affect women than men as they are not well served as men. This is in line with the argument of Demirguc-Kunt, *et al.* (2018) that the women and the underprivileged have not been significantly served by the financial institutions. This perhaps might be due to the credit controls and other regulations of the financial sector which may be beneficial to one than the other. The existence of these distortions and differences in their effect on women and men would significantly deepen financial inclusion gender gap. Studies such as Andrianaivo and Yartey (2010), Ang (2009) and Law and Habibullah (2009) relied on the Mckinnon-Shaw Hypothesis.

## 2.3 Empirical Evidences

Nanziri (2016) examines whether there is gender gap in the welfare of the financial included women and men in South Africa using a quantile regression analysis. The study covers from 2006 to 2011. The study found that there is no statistically significant difference in the welfare of financially included women and men. Aterido, Beck, and Iacovone (2011) investigates whether women are disadvantaged in terms of finance in Sub-Saharan Africa covering households and firms. Data were sourced from the World Bank covering from 2006 to 2009. The study reported that women seem to be disadvantaged in access to financial services. The study concludes that for individuals females score lower in key attributes such as education, formal employment, being head of households which in turns are key in accessing formal finance. Otchere (2016) examines the financial inclusion and development gap in Sub-Saharan Africa. The study found that the percentage of the adult population that has accounts at financial institution is about 23% less than that of the general population in the region, indicating the existence of a much bigger urban-rural financial inclusion gap. This gap has identified by the study may be due to the concentration of banks in the urban areas. The study also reported a similar level of ownership of mobile money account between adults in the urban and rural areas.

Allen, Carletti, Cull, Qian, Senbet, and Valenzuela (2014) assesses whether financial development and financial inclusion gaps exist in Africa, with other developing countries serving as a benchmark. It was found that on average, Sub-Saharan Africa lags behind in financial development and financial inclusion compared to other developing regions. Demirgüç-Kunt, Klapper and Singer (2013) analyzes the gender gap in the use of financial services using individual-level data from 98 developing countries. The data used was sourced from the Global

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Financial Inclusion database. The study shows significant gender gaps in ownership of accounts and usage of savings and credit products in developed and developing countries with a higher gap in the developing countries. The study also identifies legal discrimination against women to be one of the factors responsible for the gaps. The study concludes that the low use of financial products by women may increase their vulnerability to income shocks and reduce their ability to save and invest.

Deléchat, Newiak, Xu, Yang, and Aslan (2018) examines factors that are associated with financial inclusion of women. Data was sourced from Global Findex database. The study found a negative relationship between being female and financial inclusion the study also identifies legal discrimination as an important determinant. Fanta and Mutsonziwa (2016) investigates financial inclusion of women in the SADC region. Data for the study was obtained from FinScope Consumer Surveys for the individual countries. The study reported that gender gap in account ownership in financial institution is high in Botswana, Swaziland, and Mauritius However, in South Africa, women are more included than men. This may be attributed to the fact that women receiving social grants through SASSA card. The study concludes that the existence of financial inclusion gap leads to the exclusion of women from social and economic activities.

Gupte *et al.* (2012) measures the level of financial inclusion for India using the distance-based methodology. The study conducted in 2008 and 2009, using indicators such as accessibility, penetration, usage, ease and cost of financial services. The study showed that the financial inclusion index improved between the study periods and then argued that the improvement can be attributed to different initiatives taken by financial regulators and the government. Pi˜neyro (2013) evaluates the level of financial inclusion in Mexico using the Principal Component Analysis. The dimensions used include access, usage, financial education, consumer protection and social development. The study found that 36% of Mexico's municipalities possess a high level of financial inclusion. Bhuvana and Vasantha (2016) accesses the level of financial inclusion in the rural areas of Tamil Nadu, India, using three dimensions namely; branch penetration, deposit penetration and credit penetration. The study used the distanced-based methodology and revealed that among the districts studied, Perambalur has a higher level of financial inclusion.

Sarma (2008) evaluates the level of financial inclusion of developing and developed countries using the United Nation Development Project methodology to calculate a multi-dimensional index of financial inclusion. The study used dimensions such as accessibility, penetration and usage. The study revealed that the level of financial inclusion varies across countries covered in the study. Unlike the above studies reviewed, this study contributes to knowledge by determining whether there exists a financial inclusion gap in Nigeria using index considering various dimensions and indicators.

## 3. METHODOLOGY

Secondary data were collected and used for this study. The data were sourced from the World Bank Global Financial Inclusion database for 2011, 2014 and 2017. This study used *ex-post facto* design, due to the fact that the study used secondary data which has been gathered after the occurrence of the event. The study uses Principal Component Analysis (PCA) to determine the index of financial inclusion for both male and female. PCA was founded in 1901 by Karl Pearson (Pearson, 1901), this method makes use orthogonal transformation to convert or

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transform data into a set of values of linearly uncorrelated variables. The weight allocated to each indicator is not influenced by the researcher and the resultant index does not fall within a predetermined range like other methodology such as United Nation Development Project methodology, Distance-Based methodology, among others. Studies such as Pi neyero (2013), Clamara and Tuesta (2014) used PCA to measure the index of financial inclusion for Mexico and 82 countries respectively. The study further used tables and charts to illustrate the dimensions of financial inclusion for male and female, index of financial inclusion for male and female and the financial inclusion gap for 2011, 2014 and 2017.

## 4. FINDINGS AND DISCUSSIONS

### 4.1 Summary Statistics

Table 2 presents the summary statistics for each indicator of the three dimensions for male and female for 2011, 2014 and 2017. Account at a formal financial institution for male (FIFM) is seen to have a mean of 46.210% while that of account at a formal financial institution for female (FIFF) is 28.879%, indicating close to 100% difference. In the same vein, the standard deviation for male is 11.315% while that of the female is 4.089. Mobile money account for male (MMFM) has a mean of 3.246 while that of the female (MMFF) is 1.988, also indicating an important difference. The standard deviation is 3.669 and 1.949 for male and female respectively. These figures and others in Table 2 indicate the presence of substantial variation in the distribution of indicators used in the study.

**Table 2. Summary Statistics**

| Indicator | Observation | Mean | Standard Deviation | Minimum | Maximum |
|---|---|---|---|---|---|
| FIFM | 3 | 46.210 | 11.315 | 33.277 | 54.280 |
| MMFM | 3 | 3.246 | 3.669 | 0 | 7.227 |
| ATMM | 3 | 14.77 | 2.456 | 11.939 | 16.202 |
| BBM | 3 | 5.790 | 0.536 | 5.418 | 6.405 |
| BBFM | 3 | 4.247 | 2.106 | 2.176 | 6.387 |
| SVFM | 3 | 28.672 | 3.331 | 26.230 | 32.466 |
| SRFM | 3 | 57.753 | 4.831 | 52.174 | 60.542 |
| MRFM | 3 | 28.324 | 24.930 | 0 | 46.939 |
| MMUM | 3 | 4.766 | 4.718 | 0 | 9.435 |
| FIFF | 3 | 28.879 | 4.089 | 25.990 | 33.558 |
| MMFF | 3 | 1.988 | 1.949 | 0 | 3.896 |
| ATMF | 3 | 14.773 | 2.456 | 11.937 | 16.203 |
| BBF | 3 | 5.790 | 0.536 | 5.418 | 6.405 |
| BBFF | 3 | 3.285 | 1.169 | 1.951 | 4.135 |
| SVFF | 3 | 18.574 | 4.478 | 13.411 | 21.403 |
| SRFF | 3 | 53.756 | 2.724 | 50.609 | 55.329 |
| MRFF | 3 | 15.751 | 13.926 | 0 | 26.429 |
| MMUF | 3 | 3.017 | 3.017 | 0 | 5.225 |

**Source: Authors' Computation (2019).**

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## 4.2 Index of Financial Inclusion per Dimension for Male and Female

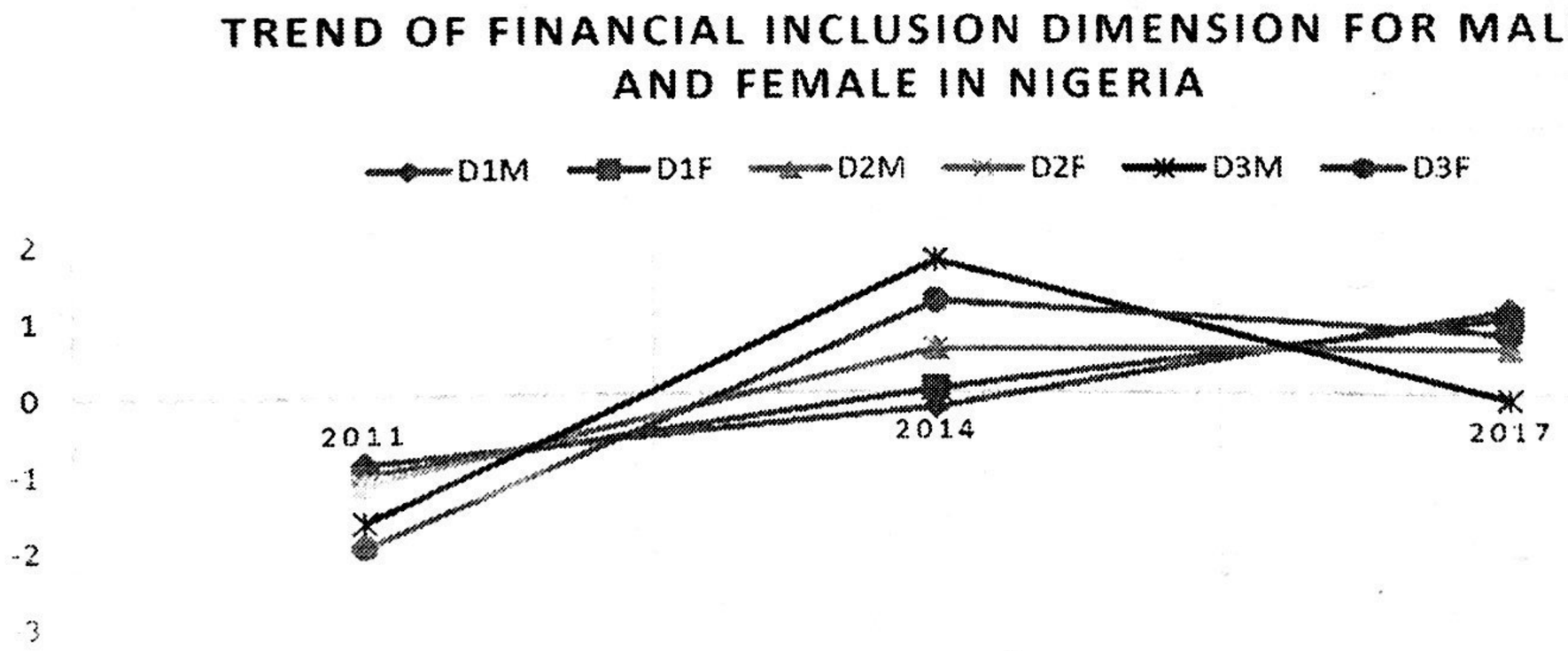
The study carried out a Principal Component Analysis and obtained the figures presented in Table 3. The analysis was carried out for the indicators in each dimension for both male and female. In Column 2, 3 and 4 of Table 4, the study reported all estimates for all the dimensions for both male and female for the year 2011, 2014 and 2017 respectively. For each of the estimates in table 4, the Eigenvalue is greater than 1. This suggests that the use of Principal Component Analysis is appropriate (Anderson, 1963; Jackson, 2003).

**Table 3. Index of Financial Inclusion per Dimension for Male and Female**

| Dimension | 2011 | 2014 | 2017 |
|---|---|---|---|
| D1M | -0.88458 | -0.20048 | 1.085051 |
| D1F | -1.02006 | 0.041415 | 0.978649 |
| D2M | -1.15469 | 0.572565 | 0.582122 |
| D2F | -1.15469 | 0.572565 | 0.582122 |
| D3M | -1.65368 | 1.742472 | -0.0888 |
| D3F | -1.97411 | 1.203478 | 0.770636 |

Note. This table presents estimates of the Principal Component Analysis. All dimensions are as defined in Table 1.
**Source: Authors' Computation (2019)**

## 4.3 Trend of Dimensions of Financial Inclusion for Male and Female in Nigeria




**Note: All dimensions are as defined in Table 1**
**Source: Authors' Illustration (2019)**
**Figure 1. Trend of Dimensions of Financial Inclusion for Male and Female in Nigeria**

In order to determine the trend of the dimensions of financial inclusion for male and female in Nigeria, the Principal Component Analysis as earlier identified was used. From figure 1, the penetration dimension for male (D1M) and female (D1F) shows remarkable improve throughout the study period i.e. 2011, 2014 and 2017. Again, the availability dimension for both

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male (D2M) and female (D2F) shows a positive improvement from 2011 to 2014 and finally to 2017. The usage dimension for male (D3M) and female (D3F) reveals that there was an increase for the two dimension between 2011 to 2014 until 2017 when there was a reduction for both dimensions. This reduction perhaps might be the implication of the decline in number of users of microfinance banks in Nigeria from 2.6 million in 2014 to 1.8 million in 2016 as reported by Enhancing Financial Innovation and Access [EFInA] (2017) which is further attributed to the revoke of license of some microfinance banks and high bank charges.

## 4.4 Financial Inclusion Gender Gap Using Index

The Principal Component Analysis was also used to measure the financial inclusion index for male and female from their respective dimensions. The financial inclusion index for male and female were used to determine the gender gap by subtracting financial inclusion index for female from that of male which results to the figures in column 4 for the year 2011, 2014 and 2017. The Eigenvalue for each of the estimates in Table 4 is greater than 1.

**Table 4. Financial Inclusion Gender Gap Using Index**

| YEAR | FIIF | FIIM | GAP |
|---|---|---|---|
| 2011 | -1.60253 | -1.33969 | 0.26284 |
| 2014 | 0.902401 | 1.187182 | 0.214711 |
| 2017 | 0.700128 | 0.152507 | -0.54762 |

**Source: Authors' Computation (2019)**

## 4.5 Trend of Financial Inclusion for Male and Female in Nigeria

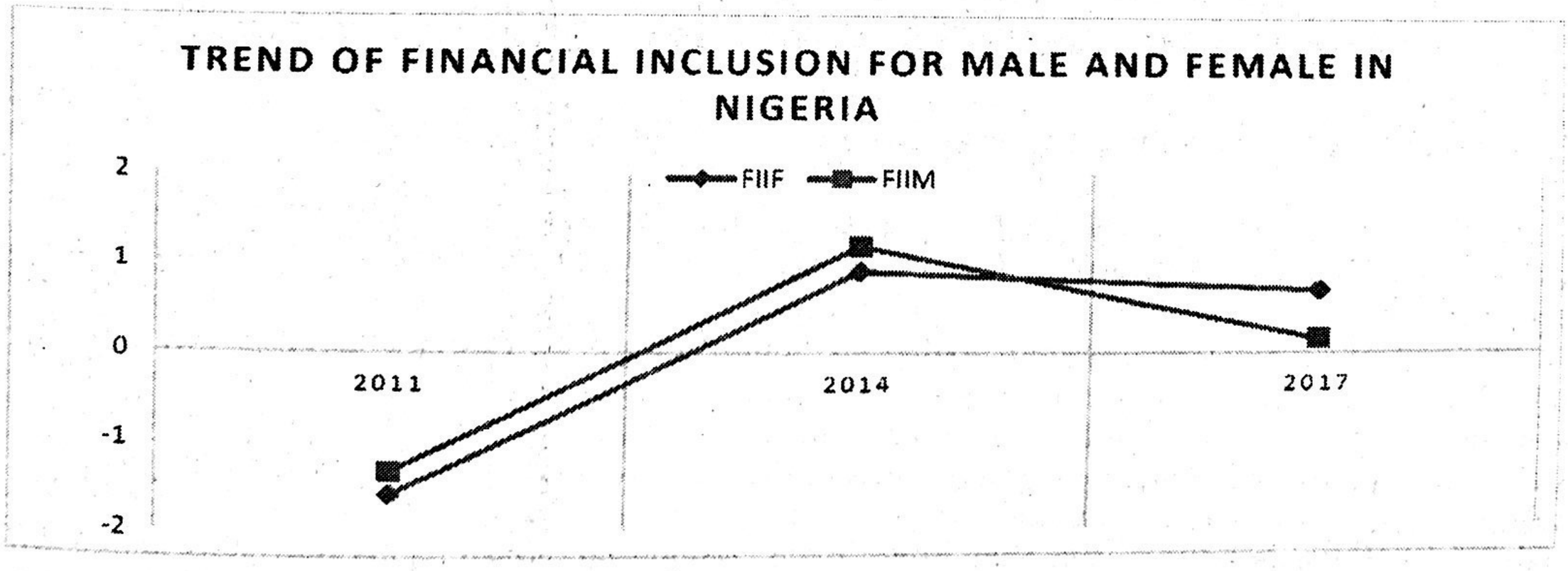



**Figure 2. Trend of Financial Inclusion for Male and Female in Nigeria**

The above illustration depicts the trend of financial inclusion per gender in Nigeria. The financial inclusion of male and female increased between 2011 and 2014, it hovered around 1.19 and 0.90 for male and female respectively. It later dropped in 2017 for both male and female.

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This perhaps may be attributed to the reduction in the index of the usage dimension between 2014 and 2017 for both male and female as identified in Figure 1.

### 4.6 Financial Inclusion Gender Gap

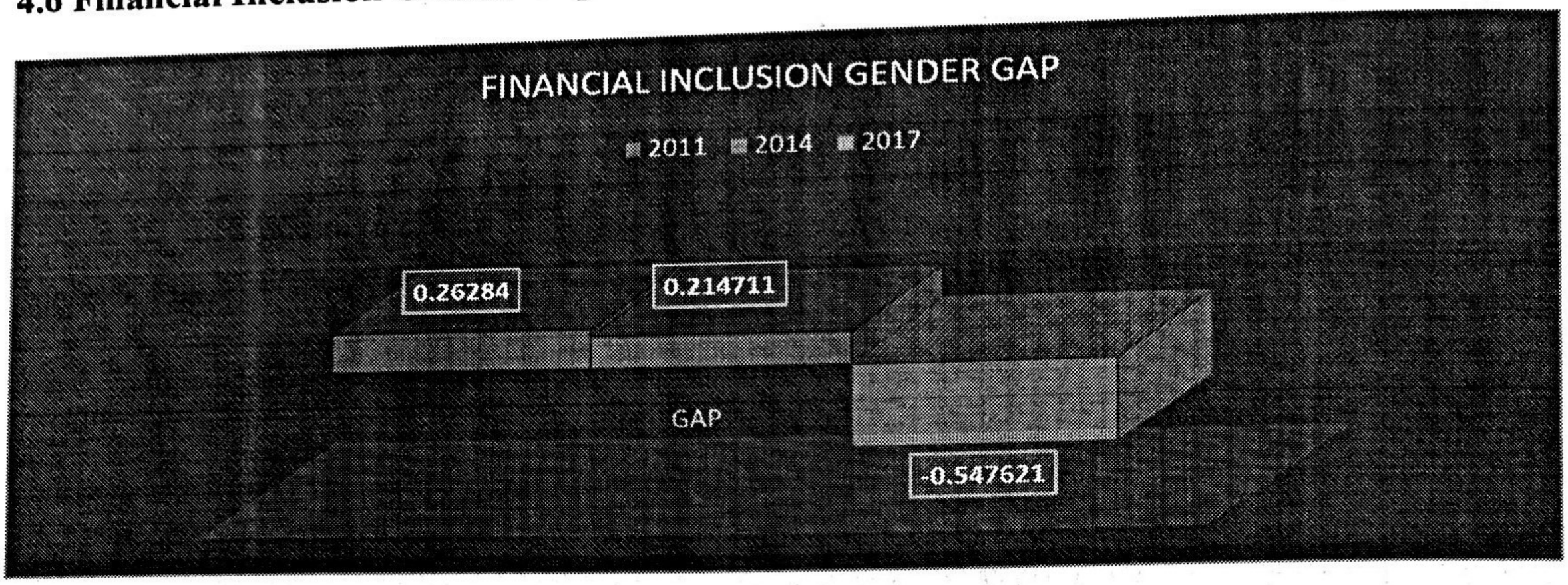



**Figure 3. Financial Inclusion Gender Gap**

Figure 3 shows the financial inclusion gender gap that exists in Nigeria. The evidence of financial inclusion gender gap is noticeable. Figure 3 shows that in 2011, men were more financially included then women with a difference of 0.26. The difference reduced to 0.21 in 2014, indicating that women are making more effort to increase the level of their inclusiveness. In 2017, women became more financially included than men. This may be linked to the argument of Agu (2018) that the CBN put in place different conceptualized ways to reach out to more female who requires special products and services due to their culture and religion. This evidence is in line with the argument of Fanta and Mutsonziwa (2016) that female are more financially included than male in South Africa.

## 5. CONCLUSION AND RECOMMENDATIONS

The discussions in the previous sections indicate that the study has provided an informative insight into the level of financial inclusion for male and female in Nigeria and has been able to establish the gender gap through the indexes. The study reported that the penetration and accessibility dimension for both male and female improved throughout the study period, while the usage dimension also improved but dropped in the last study period i.e. 2017. The financial inclusion index for male and female increased throughout the study period except for 2017 where the reduction was witnessed. Finally, the study reported that male are more financial included in the first two periods but the situation changed in the final period with the female being more financially included than their male counterpart. This concludes that different financial inclusion policies focused on women have resulted in the increase in their level of financial inclusion in recent time. Therefore, the study recommends that gender-focused policies should be headed to in order to continuously bridge the gender gap. Furthermore, restrictive conditions on usage of various financial services such as loan should be relaxed in order to avoid continues reduction. Consequently, future research may examine the determinants of financial

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inclusion for male and female separately in order to identify their drivers and map out ways of improving them.

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