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Financial Inclusion and its Impact on Employment Creation in Botswana

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ABSTRACT

The study examines the impact of financial inclusion on employment creation in Botswana using quarterly time series data for the period 2004-2016. Using Autoregressive Distributed Lag (ARDL) model, we find that availability of bank branches, ownership of bank account and borrowing from the commercial bank have a positive impact on employment creation in the short run. Similarly, in the long run, availability of bank branches, ownership of bank account has a positive relationship with employment creation in the long run. Depositors with commercial banks has a negative bearing on employment creation, both in the short run and in the long run. Therefore, policies should be aimed at ensuring easy access into the financial sector by way of reducing costs associated with account opening as well as creating affordable deposit and borrowing windows to the financially excluded groups.

Key Words: Financial Inclusion, Employment, ATMs, Financial Institution, Botswana

1. INTRODUCTION AND BACKGROUND

Financial inclusion is the process of ensuring that the formal financial system is accessible to all members of society. International Monetary Fund (IMF) defines financial inclusion as access to and use of formal financial services by households and firms (IMF, 2015). Financial inclusion has gained growing attention in development circles and international organisations recognize the increasing need for financial inclusion across the globe. The benefits of financial inclusion for the poor are extremely significant. Indeed, access to and use of formal financial services, more especially access to credit enable poor households to increase their ability to consume, deal with disruptive shocks, manage risks and improve their investment ability in tangible assets, health and education. This is can be done in a number of ways, notably by helping generate employment (by supporting farmers and SMMEs), developing human capital (financial services for access to education and to mitigate health risks), and by directly improving household welfare (products to support household needs, new technologies that reduce cost and improve access, financial services to mitigate household's risks, and by aiding asset accumulation) (FinMark Trust, 2015).

The advancement of financial inclusion in recent years has been remarkably fueled by new technologies and communications infrastructure, enabling legislation and business opportunities for the poor. Financial institutions have been driving this revolutionary expansion through innovative products and delivery channels such as banking correspondents, digital payments, insurance, pension and e-money solutions that reach low-income segments of the population.

Beck, Demirgüç-Kunt, and Honohan (2008, 2009) suggest that improved access to finance is not only pro-growth but also pro-poor, reducing income inequality and poverty. Countries with better-developed financial intermediaries experience faster declines in measures of both poverty and income inequality (Beck, Demirgüç-Kunt, and Levine, 2004). Financial depth can also have direct and indirect effects on small firms and poor households (Beck, Demirgüç-Kunt, and Honohan, 2008). Greater depth is likely to be associated with greater access for both firms and households, making them better able to take advantage of investment opportunities, smooth their consumption, and insure themselves.

Financial inclusion forms part of the indicators of United Nations Sustainable Development Goals (SDGs) and efforts to reduce poverty and unemployment. According to Lyman, et al. (2008), innovative financial inclusion does not only include traditional banking systems and conventional branches, but is inclusive of the delivery of financial services. This is made possible through the use of information and communications technologies and non-bank retail agents in order to reach the excluded members of the economy. Such services include the use of alternatives to informal payment services, insurance and saving schemes.

While tremendous efforts have been undertaken by governments to increase access to and use of financial services, huge gaps still exist in ensuring that more people are financially included. According to World Bank (2015), in 2015, around two billion people globally had no access to formal financial services and more than 50 percent of adults in the poorest households were unbanked. Financial exclusion is driven by, among others, lack of ability to demand financial services, high cost of using financial services, long distances to financial service providers and stringent Know-your-Customer requirements (World Bank, 2015). Furthermore, Sykes et al., (2016) postulates that financial exclusion is mostly as a result of remoteness, weak transportation links, and underdeveloped communication infrastructure coupled with low population densities.

However, an increase in the uptake of mobile financial services has had a significant impact on increasing access to financial services by addressing some of these challenges.

This, therefore, means that with more innovation on the supply side of financial services, more traction will be seen in terms of improving people's welfare. Likewise, increasing availability of financial services requires the right products to be delivered at the most affordable price and at an appropriate time. Literature indicates that appropriate financial services can help improve individual and household welfare and spur small enterprise activity, and more inclusive financial markets are directly linked with economic growth and employment (Osikena and Ugur, 2016).

According to Villasenor (2015), without a doubt, Africa faces complex unemployment challenges and the role of private sector development in addressing such issues is pertinent. The financial sector needs to grow in such a way that financial institutions are well regulated and service the productive informal as well as the formal economy in order to deepen job creation prospects. According to the Global Financial Access Survey, Kenya, Nigeria, Uganda, Rwanda, and South Africa are in the top highest ranked economies which have demonstrated a commitment in improving financial inclusion. This has been achieved by a combination of legislation, public policy, financial regulation and the development of digital and mobile communications infrastructure needed to develop financial access and use (Villasenor, 2015).

The importance of access to finance in Botswana is highlighted in the National Development Plan 10, where government now see access to finance as an important policy objective. Access to finance is seen as a component to a broader concept of financial development and the degree of financial development is important in any economy as it improves overall economic efficiency by making financial intermediation more efficient (Finscope Survey, 2009).

According to FinMark Trust (2003) access to financial services in Botswana though fairly low is in a better position compared to other members of Southern African Customs Union (SACU) such, Namibia, Lesotho and Swaziland. Of the total economically active

population, about 15-30 percent have access to financial services in Botswana. Jefferis (2007) noted that low access to financial services in Botswana comes as a result of high dominance of commercial banks in the financial sector, whose focus in terms of products, services and facilities lies mainly on waged urban population. Jefferis further alluded that although the financial sector is developing and new banks are coming into play, which in turn increases financial services availability, coverage in rural areas has fallen and branches in some villages continue to close. This means that only the urban population is catered for, leaving those in rural areas financially excluded from the banking industry. The study further postulated that for the population in rural areas, their closest channel to financial services is through Botswana Savings Bank (BSB) operating in association with Botswana Post which is well represented in the country.

However, Botswana is faced with challenges of unemployment which currently stands at 17.6 percent despite being an upper middle income country. The high unemployment rate in Botswana has led to high income inequalities. In order to address these challenges, the Government wants to pursue inclusive growth strategies that will benefit everyone in the process of economic growth. This is to be achieved through reduction in inequality, especially through employment creation. In order to create employment, it is important to know the factors that contribute positively to it. As previously discussed, financial inclusion is one way through which countries could benefit as it has the potential to increase economic efficiency and hence create jobs, especially through access to credit as a transmission channel to employment creation.

Osikena and Ugur (2016), postulate that a well-developed financial sector provides a robust, dynamic and stable local financial networks and structures which in turn boots productive investment and consumption and also allocates credit finance. All this leads to business expansion especially for small micro medium enterprises (SMME), exchange in technology and innovation, improve competitiveness across sectors and has the greatest potential to generate jobs which deliver good employment prospects.

Government efforts as indicated in the financial inclusion strategy of Botswana are centred around the goal: *"Improve household welfare, increase economic efficiency and support growth by reducing the percentage of adults who are excluded from 24 percent to 12 percent, and increasing those with access to more than one formal financial product from 46 percent to 57 percent by 2021."*

The government aims at achieving this by: extending financial inclusion to lower income households and target groups that are currently less well served, enhancing financial sector infrastructure, encouraging competition, improving regulation and reducing risks and facilitating well targeted credit to productive enterprises and for investment in assets. In that regard, six priorities areas to support this goal are as follows: developing the payment ecosystem, facilitating low cost savings, developing accessible risk mitigation products, improving the working of the credit market, consumer protection and empowerment,

and national coordination. From a macro economic standpoint financial inclusion will have a potentially positive impact in Botswana, through its support for national growth, helping reduce inequality, and potentially even help increase financial and economic stability. Greater access by firms and households to financial services is growth friendly, particularly for smaller and young firms where access to finance is associated with innovation, job creation, and growth.

To the best of our knowledge no study has been undertaken to determine the relationship between financial inclusion and employment in Botswana. The objective of the study is therefore to determine the impact of financial inclusion on employment creation in Botswana. Specifically, the study intends to examine the extent of financial inclusion or exclusion in Botswana and examine its impact on employment creation. The study will go a long way in ensuring that policymakers design appropriate measures that can help support access to finance, improve financial inclusion and contribute to employment creation.

The remainder of the paper is structured as follows: The next section discusses the current status of financial inclusion in Botswana. This is followed by a review of related literature on the subject. In the sections that follow the methodological approach for undertaking the study is presented followed by the presentation and discussion of the results. The paper concludes with policy recommendations.

2. CURRENT STATUS OF FINANCIAL INCLUSION IN BOTSWANA

By way of background, Botswana Finscope Survey (2014) is a nationally representative individual-based sample of Batswana aged 18 years and older. Sampling frame and data weighting is conducted by DCDM Economic and Management Consultants Botswana, revised by FinMark Trust and approved by Statistics Botswana (weighted and benchmarked to Census 2001 and 2011). In 2014, 1 503 interviews were conducted by DCDM E&M Botswana.

According to Botswana Finscope Survey (2014), there has been a slight drop in average personal monthly income between 2009 and 2014 due to a decline in the number of adults who are salaried. Overall access to the financial sector reveals that in 2014, 50 percent of adult population were banked, 18 percent were non-banked (using other formal financial services other than banks), 8 percent used informal financial services, while 24 percent were financially excluded. Thus compared to 2009, the financially excluded adults in Botswana decreased by 7 percent from 31 percent in 2009 to 24 percent in 2014 (Finscope Survey, 2009). The banked population increased by 5 percent in 2014 from 45 percent in 2009 to 50 percent in 2014. This growth was largely driven by increased number of people with transaction products (mobile and internet banking, ATM/bank cards including current account), and increased number of adults with bank savings products.

In terms of location and gender, financial inclusion is higher among adults residing in cities/towns, with 86 percent being financially included compared to urban villages (78 percent) and rural areas (64 percent), while a higher proportion (79 percent) of males were financially included compared to 73 percent of females. In terms of borrowing, the Finscope Survey 2014 shows that the proportion of adults borrowing from banks decreased from 25 percent in 2009 to 16 percent in 2014, while those saving increased from 22 percent in 2009 to 32 percent in 2014.

It is worth noting that financial inclusion goes beyond improved access to credit, savings and risk mitigation products. Financial inclusion encompasses initiatives that make formal financial services available, accessible and affordable to all segments of the population that have been historically excluded from the formal financial sector because of their income level, gender, level of financial literacy or location.

3. REVIEW OF LITERATURE

Unemployment, especially among the youth is one of the development challenges facing Botswana (Ministry of Finance and Economic Development (MFED), 2016). The youth make up more than half of the country's labour force and graduate youth unemployment rates have been persistently increasing over the years (Bosupeng, 2015). Between 2010 and 2013, unemployment among graduates was 18 percent (Mogomotsi and Modigele, 2017). In 2016, unemployment among the youth in Botswana had risen to 25.2 percent, while total unemployment rate stood at 17.6 percent (Statistics Botswana, 2017).

The problem of graduate unemployment in Botswana comes as a result of the non-employability of the graduates. This is attributed to the failure of the education system to give the graduates practical work skills required in the industry. Mogomotsi and Modigele (2017) posits that the education curriculum must be packaged in such a way that it produces open-minded graduates who see themselves as part of the globalised world and are willing to seek opportunities everywhere, especially in other African countries which are in dire need of trained manpower.

Government has not been able to adequately create sustainable employment opportunities especially for the young generations. Programmes implemented provide temporary unemployment relief with short-term span. These programmes include Ipelegeng, which has been designed for low-skilled individuals on self-selection basis. Furthermore, the National Internship Programme whose aim is to facilitate the transfer of skills for youth employability and aid a smooth integration of graduates into the economy has left only a few graduates absorbed into the mainstream labour market. The majority complete their two-year tenure only to revert back to their unemployed status (Mogomotsi and Modigele, 2017).

There is a growing consensus on the importance of strong financial systems as a policy objective in the world. Hence, financial inclusion has gained more importance as a

policy tool. Financial inclusion has been found to have the greatest potential to drive employment particularly through creation of self-employment and supporting SMMEs to grow and eventually transition from the informal sector (Osikena and Ugur, 2016). Moreover, lack of access to credit has been cited as one of the constraints to SMME development (Osikena and Ugur, 2016). Additionally, access to a bank account is the first step towards broader financial inclusion since it allows a person to send and receive payments and more importantly, to save money. Moreover, access to a bank account serves as a gateway to other financial services such as credit and insurance, services that people can use to expand their businesses, invest in education or health. The use of these services ultimately improves the overall quality of life of users (MFED, 2017).

Beck (2016) postulates that financial deepening has a critical impact on structural transformation and poverty alleviation in developing countries. Among different financial services, expanding access to payment services seems to provide the biggest and most immediate impact on individual welfare. Financial innovation, including new delivery channels, new products, and new intermediaries, has helped increase financial inclusion dramatically in some countries over the past decade. Furthermore, improved financial inclusion influences factors that may lead to employability in future. These factors include among others, an impact on money management (including avoiding over-indebtedness and shortfall of disposable income) and, associated with this, less stress and improved health and well-being (Lederle, 2009).

Financial integration can support job creation by building better financial structures and supporting cross-border banking particularly, for African financial institutions. This can reduce transaction costs and support investment in employment-creating sectors of the economy (Osikena and Ugur, 2016). Moreover, financial education can also enhance employability, particularly for women and those in the agriculture sector and the wider rural economy where lack of financial access hinders development of relevant technologies and innovation to improve productivity and enterprise growth. Hence, in order for financial inclusion to accelerate employability, financial education and skills development is pertinent.

Sethy and Goyathi (2016) and Zulfigar et. al., (2016) conducted studies which have demonstrated a positive relationship between financial inclusion and employment creation. The general consensus of these studies is that financial inclusion means making financial services available to poor, and therefore giving the poor credit facilities that suit their needs and generate self-employment opportunities. It therefore important that to assess the benefits associated with increased financial access and possible effects on individual welfare. World Bank (2014) postulates that access to finance particularly for small firms is associated with innovation, job creation, and growth. In addition, Chakrabarti (2013) and Mol and Shabna (2014) argue that financial inclusion reduces the vicious cycle of poverty and unemployment, and acts as a source of empowerment and better control of one's finances.

Yorulmaz (2016) also found a positive and significant relationship between employment and financial inclusion. However, the study was of the view that the unemployed and irregularly employed populations seem less likely to participate into the financial system. This suggests that it is employment that causes participation in the financial sector and not the other way round. According to Sykes et. al., (2016) increasing access to financial services as well as increasing financial capability to use those services effectively can enable people to invest in their education in order to improve their employability or create their own employment by financing livelihood activities.

Mugo and Kilonzo (2017) examined the impacts of financial inclusion in Kenya with particular focus on poverty eradication and employment creation. The study found that financial inclusion provides low-income households, vulnerable groups and informal enterprises with an opportunity to undertake financial transactions, generate income, accumulate assets and manage risks. This enables their participation towards inclusive and sustainable development. The study also found that mobile money assisted about 185,000 women in Kenya move from farming to business which not only created employment for themselves alone, but also provided opportunities for others.

In a study tracking the financial diaries of poor people in Bangladesh, India and South Africa, Collins, et. al., (2009) found causality between access to a range of appropriate and affordable financial services and improvement in poor people's welfare and income. Similarly, Loke, et. al., (2015) found positive relationship between financial knowledge and financial self-sufficiency, which in the medium term may lead to income-generating employment. Patel (2014) also found that access to finance is only effective for employment creation if there is a flexible repayment plan between the financial institution and individuals, if the loan is larger and the business is a high-performing enterprise.

Another study of interest is by Cull, et. al., (2014) who studied the impact of financial inclusion on poor households and found out that financial inclusion is positively correlated with employment. The study reveals that apart from job creation, financial inclusion may lead to indirect benefits such as better risk management and distribution of capital, as well as reduced transaction costs, all of which are pertinent for the improved welfare of an individual.

Literature also provides evidence that SMMEs face many obstacles, among them financial (Beck et al., 2005). Financial constraints are often found to have the largest negative impact on firm growth, especially in countries with underdeveloped financial systems. Given that small firms also tend to be more labour-intensive than large firms (Oi, 1983 and Garmaise, 2008), one would expect that the finance-employment relationship is stronger for small firms than that for large firms. This is evidenced by Ayyagari et. al., (2016) who found out that increased supply of credit results in higher employment growth, especially among small firms in developing countries.

4. DATA AND METHODOLOGY

4.1 DATA

The study uses quarterly time series data from the first quarter of 2004 to the fourth quarter of 2016 from the IMF's International Financial Statistics and Financial Access Survey database and World Bank World Development Indicators (2011) to estimate the impact of financial inclusion on employment creation in Botswana. Indicators of financial inclusion are represented by three categories: access, availability or coverage and usage. Access is measured by possession of a bank account (percentage of individuals 15 years and above), availability or coverage indicators include, bank branches per 100,000 adults, while indicators for usage include, the number of people who borrowed from a financial institution in the past year, depositors with commercial banks per 1,000 adults, and outstanding loans with commercial banks for households (percent of GDP). Employment is measured by employment to population ratio (defined by International Labour Office (ILO) as percentage individuals 15 years and above who are employed). The selection of these variables was guided by the ones used in the empirical research reviewed.

Table 1: Description of variables

Variables	Financial Inclusion Indicator	Description
EMP		Employment to population ratio (total modelled ILO estimate percentage 15 years and above)
BRA	Availability	Bank branches per 100,000 adults
BORROWED	Usage	Borrowed from a financial institution in the past year
BANCACC	Access	Bank account (percentage 15 years and above)
DEP	Usage	Depositors with commercial banks per 1,000 adults
OUT	Usage	Outstanding loans with commercial banks for households (percent of GDP)

4.2 MODEL SPECIFICATION

In time series analysis the appropriate model to use depends on the order of integration. It is therefore crucial to determine the order of integration of all variables to be used in the estimation in order to determine the appropriate model. In order to determine the order of integration, unit root tests were conducted for all variables used in the model using the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests and the results are presented in Table 2 and Table 3.

Table 2: Augmented Dickey-Fuller Unit Root Test

Augmented Dickey Fuller					
Variable	**Without Trend**		**With Trend and intercept**		**Conclusion**
	Level	**First Difference**	**Level**	**First Difference**	
EMP	7.5944*** [0.0000]		7.7711*** [0.0000]		I(10)
BANKACC	1.8517 [0.9835]	7.0000*** [0.000]	2.6101 [0.2777]	7.4922*** [0.000]	I(1)
DEP	1.3791 [0.9562]	7.0000*** [0.000]	1.9963 [0.5893]	7.2680*** [0.000]	(1)
BRWD	1.1329 [0.9309]	0.5829 [0.4590]	0.1189 [0.9965]	4.0621*** [0.0139]	I(1)
BRA	0.8456 [0.8902]	7.0000*** [0.000]	1.1745 [0.9050]	7.1929*** [0.000]	I(1)

Table 3: Phillips Perron Unit Root Tests

Phillips Perron					
Variable	**Without Trend**		**With Trend and intercept**		**Conclusion**
	Level	**First Difference**	**Level**	**First Difference**	
EMP	7.0000*** [0.000]		7.1438*** [00000]		I(0)
DEP	1.5137 [0.9663]	7.0000*** [0.000]	2.0460 [0.5626]	7.2908*** [0.000]	(1)
BANKACC	2.0559 [0.9096]	7.0000*** [0.000]	2.6374 [0.2663]	7.5148*** [0.000]	I(1)
BRWD	3.4063 [0.9997]	7.36173*** [0.0000]	2.8168 [0.1987]	9.1443*** [0.0000]	I(1)
BRA	0.8552 [0.8918]	7.0000*** [0.000]	1.1682 [0.9063]	7.2093*** [0.000]	(1)

Where:

*** represents significance level at 1% level of significance
** represents significance level at 5% level of significance
* represents significance level at 10% level of significance

Table 2 and Table 3 indicate that all variables are stationary at first difference I(1) with the exception of employment rate (EMP) which is stationary at level I(0). The I(1) variables need to be transformed into stationary data before they can be used for estimation. Based on the unit root tests, the appropriate model to use is the

Autoregressive Distributed Lag (ARDL) and it is the model used in this study. The model is chosen because the variables used in the study contain different order of integration and use of the ARDL model ensures that our results are not spurious. Thus, the study uses the ARDL model to estimate the relationship between financial inclusion and employment creation in Botswana.

The analytical framework which explores the relationship between financial inclusion and employment is specified as:

$$EMP_t = \alpha_0 + \alpha_1 BRA_t + \alpha_2 BANKACC_t + \alpha_3 BRWD_t + \alpha_4 DEP_t + e_t \quad (1)$$

Where:

EMP is employment rate, BRA measures the bank branches per 100,000 adults, BANKACC is individuals above the age of 15 years who possess a bank account in any of the banks, BRWD represents those borrowed from a financial institution in the past year and DEP represents with financial institutions.

The empirical model is specified as follows:

$$\begin{aligned}\Delta\log(\mathrm{EMP_t}) = \partial_0 &+ \sum_{i=0}^{n} \alpha_{1i}\Delta\log(\mathrm{EMP}_{t-i}) + \sum_{i=0}^{n} \alpha_{2i}\Delta\log(\mathrm{BRA}_{t-i}) + \sum_{i=0}^{n} \alpha_{3i}\Delta\log(\mathrm{BANKACC}_{t-i}) \\ &+ \sum_{i=0}^{n} \alpha_{4i}\Delta\log(\mathrm{BRWD}_{t-i}) + \sum_{i=0}^{n} \alpha_{5i}\Delta\log(\mathrm{DEP}_{t-i}) + \beta_1\log(\mathrm{EMP_t}) + \beta_2\log(\mathrm{BRA_t}) \\ &+ \beta_3\log(\mathrm{BANKACC_t}) + \beta_4\log(\mathrm{BRWD_t}) + \beta_5\log(\mathrm{DEP_t}) + \beta_6\mathrm{EC_t} \\ &+ \varepsilon_t \qquad (2)\end{aligned}$$

Where: *EC* is error correction term used to capture the deviation of variables from long-run equilibrium, ε_t is an error term assumed to be normally distributed with zero mean and constant variance, Δ denotes the differenced operator, and Greek letters are parameters to be estimated. Other variables are as explained in equation (1).

5. RESULTS AND DISCUSSION

This chapter covers the analysis of data and interpretation of the results. To examine the relationship between employment and the variables mentioned in the econometric model, a number of tests were run. The results of the diagnostic tests are presented in the Appendix to this paper. Diagnostic tests are often used to detect model misspecification and guide for model improvements. The study undertook several diagnostic tests to check robustness of the model. The estimated model yielded high values of R-squared and adjusted R-squared. The R-squared measures the variation of the dependent variable that is explained by the model. The results indicate that 60 percent of variation in the dependent variable is explained by the independent variables, hence the model is considered as a perfect fit. Furthermore, the study tested for the presence of serial correlation using the Breusch-Godfrey Serial Correlation LM test and heteroscedasticity was tested using Breusch-Pagan-Godfrey and both were not detected in the model. The Jarque-Bera test for Normality also showed that residuals are normally distributed. Following the results of the diagnostic tests carried out, one may conclude that this model is correctly specified.

5.1 ESTIMATES OF AN ARDL MODEL

The results of the ARDL model used to estimate the impact of financial inclusion on employment creation are presented in Table 4 (the short run estimates) and Table 5 (the long-run estimates) obtained using equation 2. The results for both short term and long term estimates indicate that all variables are statistically significant with the exception of borrowing from commercial banks which is not significant in the long run.

Table 4. Short run estimates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Δlog(BANKACC)	0.040188	0.013416	2.995518	0.0049
Δlog(BRA)	2.173202	0.304234	7.143183	0.0000
Δlog(BRWD)	0.034417	0.004955	6.946210	0.0000
Δlog(DEP)	-0.057080	0.015173	-3.761908	0.0006
CointEq(-1)	-1.396523	0.179343	-7.786886	0.0000

In the short run, availability of bank branches, access to bank account and borrowing from a commercial bank are positively related to employment. This shows that an increase in accessibility, availability and penetration in the financial system leads employment creation in the short run. A factor like BRWD shows that a one-unit increase in commercial bank borrowing leads to 0.03 percent increase in employment creation. Similarly, a unit increase in access to a bank account (BANKACC) leads to a

0.04 percent increase in employment creation. The results are consistent with those of Onaolapo (2015) who found out that there is a positive relationship between availability of bank branches and borrowing by households to welfare and therefore employment.

The results however, show that an increase deposits (DEP) have a negative relationship with employment in the short run. A unit increase in deposits leads to a decrease in employment creation by 0.05 percent. The coefficient for error correction term is significant with negative expected sign (-1.39), indicating that more than 100 percent of errors in the short run are corrected back to their equilibrium in the long run.

Table 5. Long run estimates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
log(BANKACC)	0.028429	0.015405	1.845408	0.0730
log(BRA)	1.543250	0.370671	4.163400	0.0002
log(BOR)	-0.000868	0.002133	-0.406885	0.6864
log(DEP)	-0.040295	0.017906	-2.250338	0.0305
C	0.168368	0.404447	0.416291	0.6796

The long run estimates indicate that ownership of a bank account and bank branches have a positive relationship with employment, while deposits and borrowing from commercial banks have a negative bearing on employment. The results are consistent with those of Sathpathy (2014); Verma and Aggarwal (2014); Mutai and Achieno (2014) and Saidu et al., (2014) who found that access to finance also brings positive change in income, which leads to socio-economic empowerment. Borrowing however is not significant in influencing employment in the long run.

6. CONCLUSIONS AND POLICY IMPLICATIONS

The paper explored the impact of financial inclusion on employment creation in Botswana using quarterly time series data for the period 2004-2016. The study established that financial inclusion has an impact on employment creation in Botswana.

The study found that in the short-run, bank account, bank branches, borrowing from commercial banks and bank deposits influence employment creation. Ownership of a bank account, bank branch availability and borrowing from commercial banks have a positive relationship with employment. A bank account is the first point of contact into the financial sector and access to such services not only leaves people empowered, but

also increases their financial literacy and allows them to have control of their finances. Moreover, availability of bank branches enables people to appreciate the services offered by financial institutions through face to face interactions. This instils confidence on the financial sector as a whole and thereby has a positive bearing on employment creation. Borrowing from the financial sector also aids households to invest in their education, invest in employment creating activities such as SMMEs which has a positive influence on employment.

Deposits have a negative bearing on employment in the short run. Bank deposits are an opportunity cost to using the funds to more productive sources that could in the long run create employment. However, deposits can be a good alternative to save the money and earn interest while still looking for opportunities to invest in.

In the long-run, bank branch availability and bank account ownership has a positive and significant relationship with employment, while deposits have a negative and significant impact on employment. Deposits have a negative bearing on employment, while borrowing is insignificant in influencing employment in the long run.

The study therefore, recommends that in order for Botswana to benefit for the positive impact of financial inclusion, availability of financial services is very important. This can be done by increasing access points beyond branches by providing more innovative ways of banking. Furthermore, as already noted, the first point of contact into the financial sector is through access to a bank account, therefore, the banking sector should adopt banking initiatives that are aimed at increasing the number of people with bank accounts by reducing costs associated with account opening, minimum account opening requirements and fees. Likewise, there is a need to create deposit and borrowing windows at affordable cost to the financially excluded groups.

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APPENDIX:

DIAGNOSTIC TESTS

Dependent Variable: D(EMP)
Method: ARDL
Date: 03/21/19 Time: 23:21
Sample (adjusted): 2005Q2 2016Q4
Included observations: 47 after adjustments
Maximum dependent lags: 4 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (4 lags, automatic): BRA BANKACC BOR DEP
Fixed regressors: C
Number of models evalulated: 2500
Selected Model: ARDL(4, 1, 1, 1, 1)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
D(EMP(-1))	-0.006003	0.107794	-0.055689	0.9559
D(EMP(-2))	-0.006003	0.107794	-0.055689	0.9559
D(EMP(-3))	-0.006003	0.107794	-0.055689	0.9559
D(EMP(-4))	-0.397415	0.126637	-3.138223	0.0035
BRA	2.141247	0.471572	4.540655	0.0001
BRA(-1)	-2.157882	0.453792	-4.755218	0.0000
BANKACC	0.040037	0.022396	1.787725	0.0827
BANKACC(-1)	-0.040676	0.023427	-1.736316	0.0916
BOR	0.034305	0.006220	5.515240	0.0000
BOR(-1)	-0.035351	0.006263	-5.644558	0.0000
DEP	-0.056570	0.025470	-2.221013	0.0331
DEP(-1)	0.057311	0.026742	2.143116	0.0393
C	0.308368	1.122054	0.274824	0.7851

R-squared	0.607270	Mean dependent var	0.061702
Adjusted R-squared	0.468660	S.D. dependent var	0.811748
S.E. of regression	0.591708	Akaike info criterion	2.017798
Sum squared resid	11.90403	Schwarz criterion	2.529541
Log likelihood	-34.41826	Hannan-Quinn criter.	2.210371
F-statistic	4.381130	Durbin-Watson stat	2.000051
Prob(F-statistic)	0.000330		

*Note: p-values and any subsequent tests do not account for model selection.

ARDL Bounds Test
Sample: 2004Q2 2016Q4
Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	1.219949	6

Critical Value Bounds

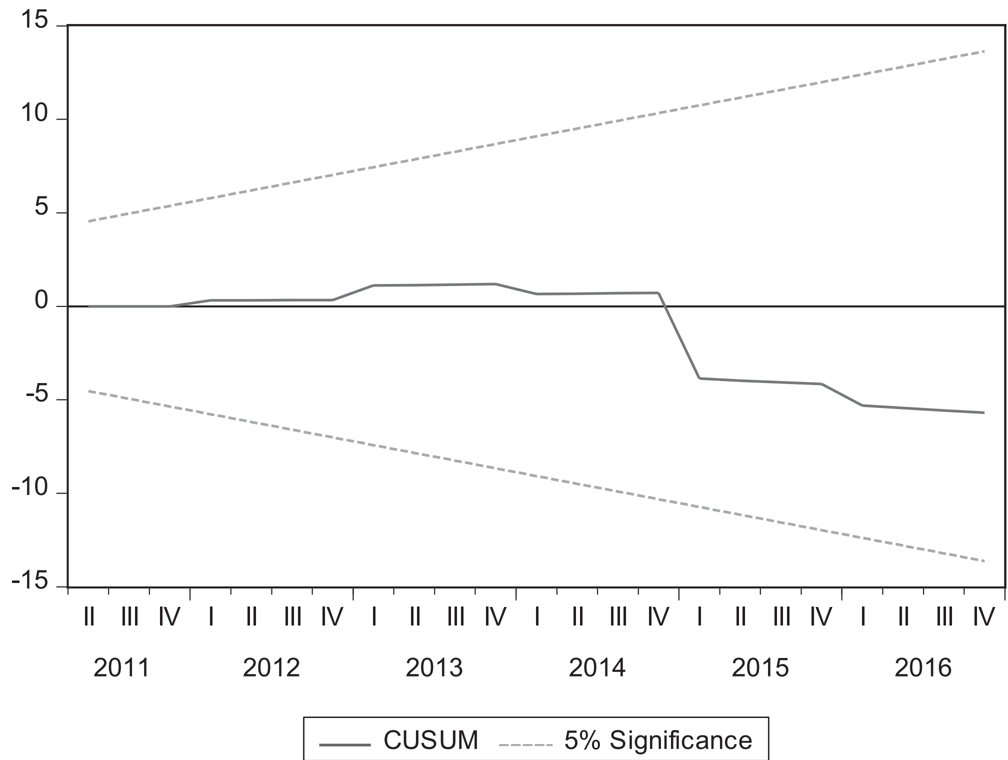
Significance	I0 Bound	I1 Bound
10percent	1.99	2.94
5percent	2.27	3.28
2.5percent	2.55	3.61
1percent	2.88	3.99

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.004771	Prob. F(1,35)	0.9453
Obs*R-squared	0.006951	Prob. Chi-Square(1)	0.9336

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.048313	Prob. F(14,36)	0.4322
Obs*R-squared	14.77010	Prob. Chi-Square(14)	0.3940
Scaled explained SS	21.65936	Prob. Chi-Square(14)	0.0859



Note. Residuals (blue line) which cross the two red dotted lines (standard error bands) indicate the instability in the coefficient of the estimated model.

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