



# Foreign remittances, deprivation and patriotism

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## Abstract

Substantial research evidence have shown the benefits of foreign remittances and patriotism to national growth and human welfare. Also, many studies have established the importance of lower extent of deprivation on economic growth and better well-being. However, little or no research has examined the impact of foreign remittances on subjective personal relative deprivation and patriotism, and impact of deprivation on patriotism in a single study. This study, therefore examined the relationship between foreign remittances, personal relative deprivation and patriotism. Results generated through analysis of cross sectional data demonstrated that greater subjective feelings of personal relative deprivation were associated with higher foreign remittances from family members, friends and neighbours. Similarly, lower patriotic behaviours were found to associate with higher subjective feelings of personal relative deprivation. The results provide further evidence for theories on relative deprivation-patriotism nexus and calls for attention on public policy to reduce economic inequality through provision of gainful employment, standardised salary/wage structure and make regular review of such salary/wages according to the prevailing economic condition.

**Keywords** Foreign remittances · Deprivation · Patriotism · Migrants · Employment · Income

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## 1 Introduction

The potential contribution that foreign remittances can make to investment, economic equality, reductive feelings of deprivation, poverty reduction and growth is widely accepted and documented in academic and policy circle (World Bank 2014; Fagerheim 2015; Jongwanich 2017; Sayantan 2017), and thus improving inflow of foreign remittances to nations across the world has become an issue of increasing focus for government and policy makers. This is more important in developing countries where foreign remittances far surpass development aid, forms an important addition to domestic income and instrumental to investment dynamics and poverty reduction (Akobeng 2016; Kelvin 2017; GiThaiga 2020; Shah et al. 2021). But the empirical link between foreign remittances and reductive or weak growth, increased feelings of economic inequality and deprivation has also been established in the academic literature. Remittances was found to associate with real exchange rate appreciation, net export deficiency, non-tradable consumption, reductive investment, lower labour participation, production market deficiency, inflation, Dutch disease and increased feelings of deprivation (Chami et al. 2005; Mishra 2005; Azam and Gubert 2006; Catrinescu et al. 2009; Acosta et al. 2009; Lianos and Cavounidis 2010; Vacaflores 2012; Mokhouf and Mazhar 2013; Khan and Islam 2013; Ball et al. 2013; Amuedo-Dorantes 2014; Sutradhar 2020; Awode et al. 2021; Imran and Mohammed 2022). In another vein, a study by International Monetary Fund, IMF (2005) on 101 developing countries found no significant relationship between remittances and economic growth. Thus findings from previous studies on impact of foreign remittances on income inequality and growth are inconclusive and inconsistent.

Recently, some studies (Adeleye et al. 2021; Javed et al. 2022) have attempted to structurally investigate the link between the pair of remittances, income inequality, deprivation and growth, controlling for country-specific and other factors that might distort a valid relationship between these variables. However, studies are yet to explore connections between these variables at micro level, and as well extend investigation to patriotic level of people to their home country when they compare their developmental outcomes relative to their *referent migrant* who send in remittances from abroad.

A recent research outcomes (Sharimakin and Ojewumi 2022) revealed that the extent of deprivation which captures level of happiness, life satisfaction, worry and social functioning (alienation, relationship, self-esteem, shame, and self-respect) are better captured by self-reporting micro data, particularly when the data are directly procured by the researchers, hence, the need for this study to examine the impact of foreign remittances on deprivation, and also, now, by extension, on patriotism, as well as impact of deprivation on patriotism in developing country, Nigeria using a cross sectional data. This study hypothesised that people tend to feel deprived and less patriotic when they compare their developmental outcomes with their referent migrant's better achievements, and thus increasing emigration intension, brain drain, unpatriotic behaviours and dwindled public revenue.

Extant studies abound on foreign remittances, deprivation, patriotism, pair of the three variables, and on any one of them in conjunction with political, economic, cultural, sociological and environmental variables. However, there is hardly any study that has considered all these variables in a single study or examined the impact of foreign remittances on subjective personal deprivation and patriotism, and impact of deprivation on patriotism in a single study. Additionally, studies on deprivation and patriotism are majorly investigated in developed countries probably for availability of data whereas studies on remittances focused more on developing countries to examine its impact on investment, poverty

reduction, income inequality, welfare and growth. Thus having a study that combines the three variables is not less important at this contemporary world as its findings would give a direction path to policy intervention for achieving reductive economic inequality, economic growth, sustainability and development. The study therefore attempts to fill gaps in literature by examining the impact of foreign remittances on subjective personal deprivation and patriotism, and impact of deprivation on patriotism in a single study.

## 2 Foreign remittances

Remittances refers to money and material resources that are sent to home country by foreign migrant living abroad. It also covers social capital such as ideas, identities, behaviours and knowledge acquired by migrants in country of destination which are transferred and used in home country as to enhance growth (World Bank 2017). It is considered as a vital solution to shortage of foreign currencies (Sayantan 2017). The significance of remittances to the world economy and well-being has created a strong desire for its study. It has been an important focus of concern for academia and policy makers especially in migrant-sending economies (Jongwanich 2017). Globally, remittances account for one of the major international flow of financial resources. In the last four years, USD 689 billion were remitted across the world with USD 529 billion remitted to developing countries in 2018 (KNO-MAD 2022). This was significantly higher compare to USD 125 billion remitted in 2004 (Maune and Matanda 2022). For most developing countries, remittances represent the largest source of foreign exchange earnings exceeding earning from main export and account for more than 10 percent of Gross Domestic Product (GDP) (World Bank 2017). The flow of remittances into some developing countries in the last decades exceed the inflow of Foreign Direct Investment (FDI), Investment Official Development Assistance (ODA), debt relief and other public source of financial development (World Bank 2014). Remittances are domestic income found to be more relatively stable and certain than private debt and portfolio equity flow (World Bank 2018).

The importance of remittances to developing nations are more noticeable recently by its contribution to improved well-being of family member in home countries who are adversely affected by COVID-19 pandemics. Households who received remittances from abroad were better able to smoothening consumption, absorb shock from job loss and death caused by COVID-19 pandemics, spread risk by purchase of various asset and diversify household economy (Sharimakin and Ojewumi 2022). The measurement of foreign remittances in literature mostly follows an IMF's standard (1993) which aggregate three balance of payment categories namely, workers' remittances, employee compensation, and migrants' transfers. The category of workers' remittances tracks current transfers made by migrants who are employed in and regarded as residents of the countries that host them to nonresidents. Workers' remittances are typically documented under current transfers and involve people who are related to one another. Employee compensation is a subcategory of factor income in the current account and consists of wages, salaries, and other benefits received by people in nations other than their own for services rendered to and paid for by citizens of such nations. Finally, migrants' transfers are contra-entries to the flow of goods and changes in financial items that arise from individuals' change of residence from one country to another, and are recorded in the capital account under capital transfers of non-government sectors (IMF, 1993).

## 2.1 Deprivation

Personal relative deprivation is a feeling of resentment and dissatisfaction stemming from the belief that one is deprived of a desired and deserved outcomes compared with some *referents* (Olson et al. 1986; Callan et al. 2011; Sharimakin and Ojewumi 2022). It is traditionally an inter-personal concept that relates to the feelings of being worse off relative to others (reference groups) in the society (Runcimann 1966; Stouffer et al. 1949). An individual feels relatively deprived when she is excluded from a number of functionings that others which may include himself has in the society. People's view about their current status are not directly related to actual achievement but relative position in the society. Runcimann (1966) described a state of personal relative deprivation as when (a) individual does not have X (b) he sees some other person or persons which may include himself at some previous or expected time as having X (c) he wants X (d) he sees it as feasible that he should have X. Thus the magnitude of a relative deprivation is the extent of the difference between the desired situation and that of the person desiring it.

Recently, the concept has been extended to cover feelings of deprivation when a comparison is made between the present and the past outcomes of same individual. An individual feels deprived when not only because his developmental outcomes is lower than reference group today but also because its outcomes are lower than what it used to be in the past. One of the early estimation attempt of personal relative deprivation was conducted by Yitzhaki (1979) in which only income was considered as the object of deprivation. It was measured as the sum of the gaps between individual's income and the incomes of all individuals richer than him. However, Bossert et al. (2007) proposed a more comprehensive measure that involves different aspect of the qualities of life in which individual relative deprivation is measured in terms of functionings from which he is excluded. This is estimated as a product of multiple of the ratio of the number of individuals who have fewer functioning failure than individual under consideration and the population size, and the average of the difference between functioning failure of individual and those having fewer functioning failure than him. Recently, Callan et al. (2011) measured personal relative deprivation with a Personal Relative Deprivation Scale (PRDS) of four-item. The scale involved a psychological stance that measures the extent to which people feel subjectively deprived relative to others. Items in the scale include, *a*. I feel resentful when I see how prosperous other people seem to be, and *b*. When I think about what I have compared to others, I feel deprived. Responses were rated on a scale from 1 (strongly disagree) to 7 (strongly agree). Higher mean score indicate greater subjective feelings of personal relative deprivation.

## 2.2 Patriotism

Patriotism has been variously defined in literature as love for or devotion to one's country, a sense of national loyalty, attachment to one's own country, love of national symbol and beliefs about a country superiority (Sullivan et al. 1992; Hurwitz and Peffley 1999; Spinner-Halev and Theiss-Morse 2003; Huddy and Khatib 2007; Baier 2010; Kleinig 2014; Healy 2020). It is also explained to involving a sense of personal identification with one's own country, willingness to sacrifice to promote country image/good and special concern for one's country well-being and that of compatriots (Gilbert 2009; Satherly et al. 2019; Nathanson 2020). Internationally, patriotism is reflected in the act of respecting laws and

orders of country being visited so as to portray a good name for one's country (Bandu et al. 2015). Recently, patriotism was defined in relation with impartiality (Baron and Rogers 2020), philosophical and political perspective (Primoratz and Pavković, 2016), political ideology (Sardoc 2020; Dietz 2020), ethics (Kleinig et al. 2015), religion (Backhouse 2020), and morals (Callan 2006; Arneson 2013).

Studies have identified various forms of patriotism, including the blind patriotism (a total loyalty, love and support without any doubt, question or objection for one's country regardless of whether one receives best from the government or not) (Schatz and Staub 1997; Schatz et al. 1999), symbolic patriotism (pride of being citizen of one's country and total respect for one's country's flag, anthem and other national symbols of the country) (Conover and Fieldman 1987; Kosterman and Fehbach 1989 Hurwitz and Peffley 1999; Schatz et al. 1999; Karasaw 2002), constructive patriotism (critical loyalty and constructive criticism of national policies driven by desire for positive change) (Schatz and Staub 1997; Schatz et al. 1999). Others include capitalistic patriotism (Hurwitz and Peffley 1999), iconoclastic patriotism (Hurwitz and Peffley 1999), instinctive environmental patriotism (Hurwitz and Peffley 1999), nationalistic patriotism (Hurwitz and Peffley 1999), low and high profile patriotism (MacIntyre 1984; Primoratz 2002a, 2002b; Scruton 2006; Miller 2007; Kleinig 2014), constitutional patriotism (Muller 2007), impartial, sport and loyalty patriotism (Oldenquist 1982), and morally positive and negative patriotism (Callan 2006; Arneson 2013).

Patriotism has been identified as an environmental virtue that needs to be promoted among citizens (MacIntyre 1984; Costa 2020). It is an element that is socially desirable and worth striving for (MuBotter 2021). It is beneficial to nature, citizens and the economy (Cafaro 2004) Engaging in patriotic activities introduces one to other people of different socio-economic background which might make life more meaningful and enjoyable (Cafaro 2009). Patriotic activities entail sacrifice that is instrumental to the smooth functioning of an economy and reduces conflict and corruption tendencies. In fact, economic growth and development are better achieved if more economic agents are patriotic (Ben and Woll 2012). In spite of these benefits, advantages and relevance of patriotism to environment, growth, development and human welfare, it is worth investigating why people might not be patriotic. Like foreign remittances, studies have attempted to measure patriotic level of citizens with various scales. Huddy and Khatib (2007) employed structural equation modelling to assess the structure of national attachment among American students on national identity (four items; e.g. "When you hear non-Americans, criticizing Americans, to what extent do you feel personally criticized?"), symbolic patriotism (two items; e.g. "How proud do you feel when you hear the national anthem), uncritical/blind patriotism (seven items; e.g. "If another country disagreed with an important United States policy that I knew little about, I would not necessarily support my country's position" and "I would support my country right or wrong.") and constructive patriotism (four items; e.g. "I oppose some U.S. policies because I care about my country and want to improve it").

In a related study, the extent of patriotism among citizens were measured in a survey scale developed and conducted by World Value Survey (WVS) from 1981 to 2007 as well as the survey by International Social Survey Program (ISSP)(2004). Items in both surveys measured the extent of people's attachment, pride and love of their countries, and were rated on 4-point scale recoded to range from (1) not at all proud to (4) very proud and loving. Solt (2011) evaluated the patriotic level of individual with two more additional items to WVS and ISSP's, and were rated on 4-point scale ranging from (1) not close at all to (4) very proud. A higher mean score in WVS, ISSP and Solt's indicate higher level of patriotism. Similarly, Ariely (2011), Fleiß et al. (2009) and Davidov (2009) measured patriotism

through three pride indicators namely, pride in the way democracy works, pride in the social security system and pride in the fair and equal treatment of all groups in society. All items indicators were rated on a unipolar scale ranging from 1 (very proud) to 4 (not proud at all). Higher mean score indicates lower level of patriotism.

### 2.3 Analytical interconnectedness between remittances, deprivation and patriotism

Research on patriotism have identified age, period of birth (i.e before or after independence), race, ethnicity, political and religious affiliation, among others, as factors that are significantly associated with patriotism (Baker and Jedweb 2003; Ku Samsu and Mohd Nor 2009; Bandu et al. 2015). Recently, findings of research on the causal factors of incessant level of unpatriotic behaviours among citizens revealed personal relative deprivation as a major contributory variable factor (Chen 2020). People feel deprived when they compare their present living standard and achievement with higher developmental outcomes of their reference groups. Although there is no consensus regarding the choice of object of deprivation and reference groups in deprivation literature, however, the fact remains that people feel deprived when they see their friends, age mates, relatives, schoolmates and neighbours having higher developmental outcomes compare to them.

The feelings of deprivation relative to another person is more disturbing if the *referent* was not better off yesterday. This connotes that a person feels more deprived when compare herself with those that were previously ranked below or equal to it but now above the person under consideration in the present distribution (Bossert and D'ambrosio 2004). One plausible factor for such possibility found in literature is promotion (Bossert and D'ambrosio 2004). The more the people a man sees promoted when he is not promoted himself, the more people he may compare himself with in a situation where the comparison will make him feel relatively deprived" (Runciman 1966; Bossert and D'ambrosio 2004). For most developing countries, migration to developed countries is adjudged promotional that spurs migrant's better welfare and beneficial to migrant's home country. Migration to a more developed country to someone's is regarded as promotion over those at home country as about six out of ten citizens in developing countries are interested to migrate to developed countries but only one is always successful partly because of stringent immigration policy of such developed countries or lack of fund to finance such movement. (Czaika and de Haas 2012).

Working in a better-economically stable, viable and developed country whose currency-value is higher than one's country gives opportunity to have a more-valued money income than income that could be earned if such individual engage in the same type of job at home country. This gives opportunity for such referent-migrant to *remit* (foreign remittances) a more valued money income back home which are used (accounting for other socio-economic factors) to acquire asset and material resources in home country which could otherwise not have been able to acquire if such individual works in own country.

### 2.4 Theoretical framework and empirical literature

Theories abound on behaviour of migrants and reasons for remittances. Theoretically, remittances are private conceptual issue which involve private transfer of income and resources from country of destination to country of origin. The decision whether or not to remit could be discussed within the two types of rational choice framework (Lianos and Cavounidis 2010). The first type involves the hypotheses that seek to explain remittances

in the context of family influence. The second explains remittances behaviour as a result of individual decision-making process. The latter is further divided into pure self interest and altruistic motivation of remittances.

Several theories have explained remittances within family context. The prominent among these is risk-sharing or co-insurance theory (Lucas and Stark 1985; Stark and Lucas 1988) with a central idea that remittances are implicit contractual arrangement between the migrant and immediate family in which the family agree to sponsor migrant's education at home, support migrant's travelling expenses and help to cover job-search cost in the country of destination, and thereafter, the migrant remits to the family to cushion the effect of economic and demographic shock such as crop failures, price fall, job loss and death of any family members. Poirine (1997), Ilahi and Jafarey (1999) view remittances as an implicit family loan arrangement that could be explained within three stages. First, remittances comprises the repayment of loan taken out by emigrants during their youth to procure a higher and better education that later makes them more productive and cope with job dynamics. In a second stage, remittances are implicit loans given to youth back home by the emigrant so as to help them(youth at home country) finance their education and make them as well more productive, until they are ready to emigrate. Then in a third stage, the next generation emigrants repay the loan to the former emigrant-lenders who may have retired in the home country. In a related manner, Hoddinott, (1994) hypothesised that decision to migrate resulted from decision to maximise joint utility function of intended migrant and family members. Similarly, Becker, (1988) view remittances on the decision to abide by the social norm and value operational within the family. The theory hypothesised feelings of guilt for migrant who deviates or fail to help family member at home.

For individual decision-making process, remittances can either be selfishly motivated or others-motivated. Remittances are selfishly motivated if no one else's welfare, except the migrant's is taken into consideration whereas, when remittances are sent home to cater for both the migrant and relatives at home country, it is considered altruistic. A selfishly-motivated remittances are manifested when rationale for sending money back home is motivated by plan to: (i) inherit family's (parents) property particularly if such inheritances is conditioned on migrant's behaviour towards parents (ii) invest at home and ensure that such investment are protected and taken care of by family member (iii) protect long-term plan as migrant plan to return back home and there is need to adequately prepare for such returns (Lucas and Stark 1985; Lianos and Cavounidis 2010). This study therefore hypothesised that feelings of deprivation become worse if remittances are selfishly motivated.

Theoretically, the link between deprivation or economic inequality and patriotism can be traced to diversionary and cohesion theory. Diversionary or social psychology theory argued in favour of greater level of patriotism during deprivation. The diversionarists assert that states generate patriotic sentiments to respond to the threat of unrest posed by high level of economic inequality (Solt 2011; Tobias 2017; Scott and Graig 2021). Economic inequality is recognised by government as economic misery and a useful tool for mobilizing people against its supposed causes (e.g. foreign competition, immigration). Government cunningly endeavours to foster greater level of patriotic sentiment from citizens to respond to adverse consequences (such as insecurity) triggered by high level of economic inequality (Elad et al. 2022). Similarly, the social psychologists claimed that economic inequality depresses the social status of the poor and so encourages them to identify more closely with the nation, because their national characters offer them a higher-status identity. In other words, people are more likely to show higher level of patriotism when that affiliation enhances their senses of self-worth and their position in society (Chen 2020). On the other hand, cohesion, new-nations and Asia developmental-state theories argued that economic inequality are more likely to results to

lower level of patriotism. Deutsch (1964), a cohesion theorist asserted that economic inequality tends to result to social conflict and unpatriotic behaviours. This study therefore attempts to examine which theory may better describe the relationship between deprivation and patriotism given foreign remittances of family members, friends and neighbours in Nigeria.

Empirically, with respect to the relationship between remittances and deprivation, some studies (Stark and Bloom 1985; Stark and Lucas 1988; Stark and Taylor 1989; Massey and Parrado 1994; Lianos and Cavounidis 2008; Saleh 2013; Davis and Lopez-Carr 2014) submitted that greater extent of deprivation in a family were associated with lower remittances sent by family member living abroad. This suggests that migrants from less deprived families are more likely to send money back home than migrants from highly deprived home. Similarly, concerning the relationship between deprivation and patriotism, Van Evera (1990), Posen (1993), Shayo (2009), Solt (2011) and Sharimakin and Ojewumi, (2022) found a positive relationship between the two variables, whereas Deutsch (1964), Tilly (1998), Gilbert (1998), Ikuo and MacDougall (1999), Shulman (2003) and Chen (2020) concluded that a significant wider inequality gap leads to lower patriotic level among the citizens. There is however a gap in literature to explore the relationship between the three variables (remittances, deprivation and patriotism). Investigating relationship among these variables becomes necessary because of their importance to growth and general well-being. An expositional study of these variables, their relationship as well as interconnectivity will go a long way at this period for policy direction, initiatives, implementation and monitoring for growth and better welfare.

### 3 Method

#### 3.1 Participants

A stratified random sampling techniques were used to draw a sample from each stratum of academic staff (i.e Graduate Assistant, Assistant Lecturer, Lecturer II, Lecturer I, Reader and Professor) and non-academic staff (Administrative, Bursary, Audit, Health Centre, information and Public Relations, and Works and Maintenance) of Adeyemi Federal University of Education, Ondo (225), four private banks (114), 52 market men and 23 women in Ondo town. This was achieved through a selection of a proportional stratified allocation of sample size  $n_i$  in fixed stratum  $k$  of size  $N_i$  from a population size  $N$ . Where  $n_i$  is number of sampling unit drawn from  $i^{th}$  stratum,  $k$  is number of strata and  $N_i$  equals number of sampling unit in  $i^{th}$  strata. Thus for fixed  $k$ , we selected  $n_i$  that was proportional to stratum size  $N_i$ , i.e.,

$$n_i \propto N_i$$

or  $n_i = C N_i$  where  $C$  is the constant of proportionality, thus

$$\sum_{i=1}^k n_i = \sum_{i=1}^k C N_i$$

$$or n = CN \rightarrow C = \frac{n}{N}$$

$$n_i = \left(\frac{n}{N}\right)N_i$$

In all, a total participants of 414 individuals (241 men, 171 women and 2 unreported sex) were involved in the study. These sample were considered best for the study because it



included participants in the three main types of employment (government, private and self-employed) who could better describe the variables of interest. Participants ages range from 19 to 76 years with a mean age of 32.8 and a standard deviation of 6.24. More proportion of aged participants were found within market men and women than staff of the university and banks. Bank staff have more proportion of younger participants. A university ethics board approved the study procedures.

### 3.2 Procedure

A structure set of questionnaire were administered by the researchers and five research assistants. Informed training were conducted for the research assistants for three days on the design and objectives of the research so as to guide their administrative activities. Objectives of the research and items in the questionnaire were painstakingly interpreted to local languages for some market men and women who could not read, write or understand English language. Collection of questionnaire started on the seventh day of distribution with a visitation to the participants. Set of questionnaire administered on the university staff were retrieved within a maximum of 5 visits whereas a maximum visit of nine were made for the collection of administered questionnaire on bank staff. For market men and women, (though fewer in number), a maximum visit of 4 were made. In all, 417 copies of questionnaire were retrieved. Of all the participants, 411 were Nigerian by birth, only 3 indicated Nigerian citizenship by marriage. Three participants did not indicate citizenship and as such were excluded from analysis.

### 3.3 Measure

*Remittances.* Items on remittances are: (1) Choose the category of people you have abroad. *a. family b. friend. c. neighbour d. none.* If your answer to question 1 is a, b and c, proceed to other/subsequent questions (2) Has she/he been sending money/material resources back home *a. yes b. no* (3) If yes, for what purpose *a. to assist him/her (your family member, friend, neighbour) to build house. b. to cater for family, friends and neighbour back home. c. to help him/her buy car. d. to start or/and build his/her businesses. e. to settle debt incurred on him/her before travelling abroad. f to jointly start or/and build businesses with family members, friends and neighbours. g. others.* Item *a, c, d, and e* were considered to be selfishly-motivated whereas, item *b and f* were altruistic (4) Do you wish to travel abroad *a. yes b. no.* (5) Benefits from remittances were measured by 3 items on a 7-point Likert scale option ranging from 1- strongly disagree to 7-strongly agree. *a. My relationship with my family, friend and neighbour living abroad has assisted me to receive money and other materials from them. b. I have really enjoyed many benefits from my family, friend and neighbour who resides abroad. c. I cannot deny that much had been done for me by my family, friend and neighbour living abroad.* Higher total scores indicated more remittance benefits received from family, friend and neighbour migrant.

*Deprivation.* Deprivation was measured by a modified 5-item of deprivation by Calan et al. (2011) with a six-point Likert type option ranging from 1 (strongly disagree) to 6 (strongly agree). Items were: *a I feel deprived when I think about what I have compared to what my family member, friend and neighbour who travelled abroad has. b. I feel resentful when I see how prosperous my family member, friend and neighbour who travelled abroad seem to be. c. I feel dissatisfied with what I have compared to what my family member, friend and neighbour who migrated abroad has. d. I feel privileged*

compared to my family member, friend and neighbour who travelled abroad. e. When I compare what I have with what my family member, friend and neighbour who travelled abroad has, I realise that I am quite well off. Items 4 and 5 were reverse scored. Higher total scores indicated higher subjective feelings of personal relative deprivation towards the achievement of family, friend and neighbour living abroad.

**Patriotism.** Patriotism was measured by a modified four-factor model (i.e. national identity, symbolic patriotism, constructive patriotism and uncritical/blind patriotism) based on Huddy and Khatib (2007). National identity consist of 4 items (e.g. how important is being Nigeria to you?) which was assessed on a 5-point Likert scale ranging from 1 (not important to 5 (important).The  $\alpha$  coefficient was .81. Symbolic patriotism was assessed using two items (How good does it make you feel when you see the Nigerian flag flying?, How good does it make you feel when you hear the national anthem?) and was assessed on 5-point Likert-scale of 1 (not excited) to 5 (most excited). Constructive patriotism was assessed by four items (e.g. if I criticise Nigeria, I do so out of love of country) on a 5-point Likert scale of 1(strongly disagree) to 5 (strongly agree).A 7-item of uncritical patriotism (e.g. I support my country's leaders even if I disagree with their action) were assessed by a 5- point Likert scale that ranged from 1(strongly disagree) to 5 (strongly agree). Higher scores in each factor indicated higher level of patriotism for one's country.

A Multivariate Analysis of Variance (MANOVA) and hierarchical sequential regression analysis based on marginal effect was used to estimate relationships. Both direct and interactive effect of foreign remittances, deprivation, employment type, academic qualifications on deprivation and patriotism were estimated. In order to ensure that assumptions for the use of MANOVA and multiple regressions are met, the data was screened for outliers, independence of observations, multicollinearity, normality, linearity, homogeneity of variance-covariance matrices and tolerance levels.(Appendix B) The interaction terms were created with the cross-product of the variables. Following the suggestions by Aiken and West (1991), continuous covariates were centred before the cross-items were determined to overcome the problem of multicollinearity.

Interactive regression serves as a better platform on which relevant indicator can be considered simultaneously to improve macroeconomics outcomes (Tchamyou 2019). The study therefore examined the effect of conditional interaction of constitutive terms on deprivation and patriotisms. Following Brambor et al (2006), and that intuition behind conditional hypotheses is often well captured by multiplicative interaction model (Aiken and West 1991) as well as to avoid inferential errors, all constitutive terms were included and interpreted appropriately in the model. The study also presents a result on range for marginal effect and measure of uncertainty in which we calculate the marginal effect of covariates for modifying variables other than zero. In other words, in order to investigate the problem statement motivating this study (i:e assessing the impact of foreign remittances in deprivation for patriotism) as documented in contemporary interactive regression studies, net impact are computed (Tchamyou and Asongu 2017; Asongu and Odhiambo 2019c; Asongu 2020a; Asongu 2020b). Net effect represents and reveals both the unconditional effect of foreign remittances and the conditional effect supported by the interactive regression. Net effect are computed only when the unconditional effect of independent variable and the conditional effect pertaining to the interaction between independent variable and modifying variable are significant (Asongu 2020a, b).

## 4 Results

### 4.1 Characteristics of demography and remittances

Descriptive analysis on remittances revealed that 87% of the total participant reported to have friends living abroad whereas 63% attested to having family member abroad. Further, 58% reported to have neighbour migrants while 53% claimed to have friends and family abroad. Only 36% reported to have family, friends and neighbour migrants while 42% attested to having family and neighbour. A greater proportion (45%) reported to have friends and neighbour migrant. In like manner, 82% of the participant wish to travel abroad if opportuned. Further, statistics explaining purposes of remittances show that many people (77%) had family members, friends and neighbours who has been sending money back home. Out of this, more than 79% reported that their family members, friends and neighbour had at some point sent money selfishly (purposely to cater only for the migrant) back home, and 68% of people attested that their family members, friends and neighbours had sent money to cater for family and other people at home country.

The commonest purpose given by people why migrants sent money were for selfish interest, with helping the migrant to build houses as a major important reason. The prediction that feelings of deprivation becomes worse if remittances are selfishly motivated were supported. The sample t-test revealed that people who reported that migrants do selfishly send money back home, on average had a greater extent of subjective personal relative deprivation than those who attested that migrants do send money to cater for family members, friends and neighbours. The difference was statistically significant ( $t=2.507$ ,  $p<0.05$ ). Those who reported that migrants do send money to cater only for themselves had an average extent of deprivation of 6.56 while those that attested that migrants sent money to cater for family and other people had an average extent of 4.13.

### 4.2 Extent of deprivation

The total personal relative deprivation score in Table 1 (Appendix) revealed that 45.41% of the participant was ordinarily deprived while 25.30% reported a strong feelings of deprivation relative to the achievement of their counterparts living abroad. Thus a total proportion of 85.33% participants reported deprivation relative to the achievement of their counterparts living abroad. This gives a confidence on the reality of deprivation among participants and reliability of deprivation score for our analysis.

### 4.3 Characteristics of perception of people relative to migrants' achievements living abroad

Table 2 (in Appendix 1) presents the mean deprivation scores of people with various employment status, educational attainments, income levels and other individuals background characteristic (age, gender, married) relative to the achievements of their respective migrant family members, friends and neighbours who live abroad and remit money/resources back home. The results of the test for differences in the feelings of deprivation relative to family members, friends and neighbours are also presented.

For employment status, an overall multivariate effect was found (Multivariate  $F$  ( $df = 8,4250$ ) = 24.65,  $p < .001$ ). Univariate  $F$ -test revealed differences in the feelings of deprivation by government and private workers, and self-employed. Scheffe' *post-hoc* test showed that government workers feel more deprived relative to the developmental outcomes of their migrant friends than family members and neighbours. Similarly, workers in private organisations as well as self-employed were found to feel more deprived relative to the achievement of their friends than the achievement of family and neighbours. A significant overall difference was also found in the feelings of deprivation between educational attainment relative to the developmental outcomes of migrant family members, friends and neighbours (Multivariate  $F$  ( $df = 6,7631$ ) = 21.42,  $p < .001$ ). Univariate  $F$ -test revealed that NCE(Nigeria Certificate in Education)/ND(National Diploma)/HND(Higher National Diploma)/B.Sc. graduates as well as Masters and PhD graduates feel more deprived relative to the developmental outcomes of their migrant friends than of family and neighbours whereas secondary/college school graduates feel more deprived relative to the achievement of their family members and neighbours than of friends.

With respect to income, an overall multivariate effect was found (Multivariate  $F$  ( $df = 6,7745$ ) = 53.12,  $p < .001$ ). However, a univariate  $F$ -test revealed no significant difference among people who earn above N300,000 and those within the income range of N101000- N3000000 whereas there were differences for people with income less than thirty thousand and also for those who earn between N31000 and N100000. Scheffe' *post hoc* test revealed that people who earn below thirty thousand naira feel more deprived relative to the achievements of their family members than of friends and neighbours whereas those within the income range of N31000-N100000 feels more deprived relative to their neighbours than of family members and friends.

In term of age, gender and marital status, there was a significant multivariate effect found between relations with migrants in the MANOVA conducted (Multivariate  $F$  ( $df = 8,3662$ ) = 55.37,  $p < .001$ ). There was also a significant univariate differences in the feelings of deprivation relative to the achievements of migrant family members, friends and neighbours. Male were found to be more deprived relative to the outcomes of their friends whereas female were more concerned about the achievements of their migrant family members. Comparative analysis among participants revealed that feeling of deprivation towards family member were most comparable to friends.

Table 2 (in Appendix 1). Deprivation score relative to Migrants' achievements.

#### 4.4 Predicting deprivation and patriotism

The result of the regression analysis predicting deprivation as well as national identity, constructive patriotism, uncritical patriotism and symbolic patriotism are presented in Table 3 (in Appendix 1). In step 1, there was a significant change in explained variance when demographics (age, gender, married) were introduced into the model. Results show that feelings of deprivation relative to the achievements of migrant family members, friends and neighbours increases as people grow older. The second step, in which the employment types were added, represented a significant increase in explained variance ( $R^2_{change} = 0.17; P < .001$ ). Feelings of deprivation relative to the developmental outcomes of migrants family members, friends and neighbours increases for those working in both public and private sector. Step III displays a small increase in explained variance ( $R^2_{change} = 0.02; P < .001$ ) when education was included but all the educational status were significant.

People with higher academic qualifications feel more deprived comparing their achievements to migrant family members, friends and neighbours. In step 4, all income status evidenced significant effect on deprivation and increase the explained variance. Feelings of deprivation reduces with higher income ( $> N300000$ ). Subjective feelings of personal relative deprivation were more pronounced against migrant friends than family members and neighbours in step 5. Similarly, those who received remittances from migrants feel more deprived than others who do not receive remittances in step 6.

With respect to patriotism, all the demographics showed a small significant relationship with patriotism ( $R^2_{change} = 0.03; P < .001$ ). However, age was negatively related to patriotism. In step 2, all the employment status evidenced significant effect on patriotism and increase the explained variance to 0.32 ( $P < .001$ ). Working in government and private parastatals were negatively related to patriotism while the association was positive for self-employed. There was a significant increase in explained variance when education was added to the model. Results show a negative association between patriotism and higher academic qualifications (B.Sc, Masters and P.hD). The extent of unpatriotic behaviour was higher for P.hD than B.Sc and Masters. In step 4 when income was added, there was a significant increase in explained variance. However, a negative association existed between patriotism and income lower than thirty thousand naira whereas people who earn above N 300,000 are more likely to be patriotic. Relations of family and friends evidenced a significant but negative association with total patriotism whereas there was no significant relationship found between neighbour and patriotism in step 5. In step 6, there was a significant increase in explained variance when benefit was included in the model. The level of patriotism reduces with increase in remittances benefits. The more people benefit from migrant's foreign remittances, the less likely they display patriotic attitudes. In step 7 when deprivation was included, there was a significant increase in explained variance to 0.37 ( $P < .001$ ). The results revealed a negative association between national identity, constructive, symbolic patriotism and subjective personal relative deprivation.

Results on endogeneity test using instrumental variables (see appendix B) showed that the explanatory variables in deprivation and patriotism models are truly exogenous. (Tables 5, 6 and 7 in Appendix 2). Test on appropriate number of instruments revealed that the regression models have no more instruments than necessary, and that all instruments are strongly correlated with suspected endogeneous variables in both models. Results in Tables 8, 9 and 10 (in Appendix 2) showed that the instruments have predictive power in explaining the explanatory variables in both models and clearly have a strong departure from zero with  $F$  statistics exceeded 10 for all instruments (Glewwe 2006).

The results of the regression analysis predicting deprivation, national identity, constructive, uncritical and symbolic patriotism when variables were interacted are presented in Table 4 (in Appendix 1). The results also show the net effect of interaction of variables. For instance, the effect from the interaction between government and secondary variable on deprivation is  $0.0828([0.01 \times 2.28] + [0.06])$ , where the mean value of government is 2.28, the unconditional effect of secondary education is 0.06 while the conditional effect from the interaction between government and secondary education is 0.01.

In step 2 when government workers were interacted with academic qualifications, there were small but significant increase in explained variance ( $R^2_{change} = 0.01; P < .001$ ). Interaction of government and Master degrees as well as government and Ph.D were positively related to greater feelings of deprivation relative to migrants' achievements. There was also a positive conditional effect between government workers and secondary, NCE, B.Sc., Master and P.hD academic qualifications, indicating the significance of these interactions on the extent of deprivation. Similarly, there was an increase in explained variance when

private workers were interacted with academic qualifications ( $R^2_{change} = 0.03; P < .001$ ). Interaction between private and B.Sc, Masters and Ph.D were associated with greater subjective feelings of personal relative deprivation. The net effect showed a positive conditional effect between people working in private sector and NCE, Master and Ph.D academic qualifications. In Table 6 (in Appendix 2), holding the effect of demographics constant, there was a significant increase in explained variance when government workers were interacted with income. Interaction of government workers and income that is less than thirty thousand naira ( $< N 30,000$ ) as well as government workers and N31000-N100000 were positively related to greater subjective feelings of personal relative deprivation whereas a negative association existed between deprivation and interaction of government and income above N300000. However, there was a positive conditional effect from the interaction between government workers and people earning  $< N 30,000$ , N31000-N100000, N101000- N300000 and  $> N 300,000$ . In step 5, only interaction of private and income greater than N300000 was significant. Subjective feelings of personal deprivation relative to the achievement of migrant family members, friends and neighbours reduce with people who earn income above N 300,000.

With respect to patriotism, there was a significant increase in explained variance when government workers were interacted with different academic qualifications in step 2. The level of patriotism significantly reduced with interaction of government workers and B.Sc., Masters and Ph.D. Similarly, there was a substantial increase in explained variance when private workers were interacted with academic qualifications. Lower display of patriotism were associated with people having Masters and Ph.D degrees in private sector. Similarly, lower display of patriotism was associated with people who earn below N30000 in both public and private sectors whereas a higher level of patriotism was evidenced with those earning above N 300,000 in public and private sectors.

Other interactive hierarchical sequential regression predicting deprivation and patriotism (i.e relations  $\times$  benefit, employment  $\times$  benefit) were explored. Results on interaction of relations and benefit revealed that people who have benefitted from remittances sent by friends feel more deprived and expressed lower level of patriotism. Similarly, interaction of government employees and benefit as well as private workers and benefit were positively associated with greater subjective feelings of relative deprivation and negatively related to patriotism. For comparison between the types of patriotism, greater proportion of people were more patriotic constructively than other (symbolic, national identity, uncritical) forms of patriotism. Further, greater subjective feelings of personal relative deprivation were more associated with lower attachment to national identity and symbolic patriotism than uncritical and constructive patriotism.

## 5 Discussion

Previous studies on remittances highlight its significance on growth and well-being. Specifically, remittances has been found to impact positively on well-being of migrants and their families back home. Debt finance on migrant's education at home country, for instance, are sometimes settled through remittances. Likewise, remittances are instrumental to raising family's standard of living with a consequential effect of reducing the number

of dependents in the family. In another vein, the relationship between economic inequality (deprivation) and patriotism has been discussed in literature. However, the overall objective of this study was to investigate the relationship between remittances, subjective personal relative deprivation and patriotism. In other words, we provide explicit insight into the impact of remittances of family members, friends and neighbours on people's (at home country) subjective personal relative deprivation and by extension, on level of patriotism. It is also an exposition to test the theories relating to deprivation and patriotism.

In this study, we found that many people have migrants family members, friends and neighbours living abroad and also willing to travel abroad. It reveals the readiness of citizens to migrate if given opportunity. This probably might be impacting adversely on the economy in terms of brain drain and capital flight. It is also a signal on the current state of the country and level of life satisfaction. The study also found that greater proportion of remittances to home country (Nigeria) was purposely meant to cater for the migrant, few were sent to cater for family, friends and others at home country. The study also found that remittances are associated with subjective personal relative deprivation. Greater proportion of people feel deprived relative to the achievements of their migrant family members, friends and neighbours living abroad. Our findings revealed that level of patriotism reduced when people are deprived. This supports cohesion (Deutsch 1964; Gilbert 1998; Shulman 2003), new-nation (Tilly 1998) and Asian developmental (Ikuo and MacDougall 1999; Chen 2020) theories as against the diversionary (Posen 1993; Van Evera 1990; Solt 2011) and social psychology (Shayo 2009) theories. Further, patriotic level were found to fall with the aged and higher academic qualifications. This suggests that as people grow older and acquiring higher academic qualifications, they tend to be less patriotic when they compare their achievements with their migrant family members, friends and neighbours. Finding revealed that people who benefitted from remittances are more likely to feel deprived comparing what they could achieve if they migrate abroad to what they received from their migrant family members, friends and neighbours. This suggests that the more people received remittances from migrants, the greater the feelings of deprivation and less likely to be patriotic. This is particularly more pronounced among people who received remittances from friends. Those having higher academic qualifications in both government and private sectors were found to feel more deprived and less patriotic to the country. The explanation for this is that higher academic qualifications is expected to improve one's skills and expertise with resultant effect of widening chances of employability, demand for one's labour and increase in earnings. People with higher academic qualification thus feel deprive when they compare their achievements with higher developmental outcomes of their migrant family members, friends and neighbour particularly if such migrants have lower academic qualifications compared to them.

## 5.1 Limitation

Like other studies, this study is not without limitations that influence its conclusion and give direction for further studies. First, this study explored the impact of some individual background characteristics on deprivation and patriotism which has really provided more insights into demographic-deprivation/patriotism nexus. However, other individual background characteristics such as number of children might be considered. Second, it is no

doubt that this study provided an insightful findings on the relationship between deprivation and patriotism, however, other forms of deprivation aside the feelings against migrants, such as intra deprivation (personal subjective feelings of deprivation of oneself overtime), other-regarding (personal subjective relative deprivation for general others) and mobile-transition deprivation (deprivation felt relative to people one considers currently having higher achievements than him/her but were in lower income/resources status in the earliest previous time) might be explored to either validate or otherwise, theories of deprivation/patriotism-nexus. This could also be studied with more forms of patriotism.

Although our data set had revealed the necessary information and findings on which impactful conclusions were drawn, however, there could be a replicate of this study with a longitudinal data set on which causal inferences could be provided. Third, relations with migrant, as a covariate, was considered either as family member, friend or neighbour. We are not unaware that people might have relations with two (family and friend; family and neighbour, friend and neighbour) or all the three covariates (family, friend and neighbour), thus further studies could be conducted where these covariates are interacted and their impact on deprivation and patriotism examined. Lastly, people without jobs could be factored in as covariate to examined its impact (with or without interaction with other covariates) on personal relative deprivation and patriotism.

## 6 Conclusion and policy implication

The study established a link between foreign remittances, subjective feelings of personal deprivation and patriotism. Greater subjective feelings of personal relative deprivation were associated with higher foreign remittances from friends, family members and neighbours. Similarly, lower patriotic behaviours were found to associate with higher subjective feelings of personal relative deprivation. The results provide further evidence for theories on relative deprivation-patriotism nexus. The study also supports a large body of evidence that economic inequality is associated with lower level of patriotism. Further exposition of the results established that foreign remittances (though beneficial to well-being of recipients in home country) increased emigration intension so as to also remit money/resources back home and reduce income/achievement gap. This is more noticeable among those having higher academic qualifications and people who had benefitted from remittances, especially, remittances from friends. This calls for attention on public policy to reduce economic inequality through provision of gainful employment, standardised salary/wage structure and other allowances benefits for workers in public and private sectors and make regular review of such salary/wages according to the prevailing economic condition. Further, policies to achieve economic growth and development, and better welfare are likely to reduce intension and tendency to migrate.

## Appendix 1

See Tables 1, 2, 3, 4



**Table 1** Distributional scores for items of deprivation

Item	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly agree	Total
1	–	5	11	2	10	282	101	411
2	6	32	25	10	88	143	109	413
3	17	26	28	9	75	152	102	409
4	4	7	15	5	73	197	111	412
5	15	37	48	–	55	161	98	414
Total	42(2.03%)	107(5.20%)	127(6.17%)	26(1.26%)	301(14.62%)	935(45.41%)	521(25.30%)	2059

Item 4 and 5 were reversed-scored

**Table 2** Deprivation score relative to Migrants' achievements

Deprivation by:	Remittances				Chi square	Univariate <i>F</i>	Means comparison
	Family (1)	Friend (2)	Neighbour (3)	Total			
<i>Employment status</i>							
Government	2.62	3.04	2.12	2.28		43.12***	1 < 2; 3 < 1, 2
Private	1.63	2.19	2.04	1.82		7.62***	1 < 2, 3
Self-employed	2.46	3.12	1.95	2.07		23.43*	1 < 2; 3 < 1, 2
<i>Education</i>							
No formal edu	3.26	2.87	3.01	2.71		21.05***	1 > 2, 3; 3 > 2
Secondary edu	2.53	2.27	2.31	2.25		32.73***	1 > 2, 3; 3 > 2
ND/NCE	3.32	3.51	3.02	3.11		12.45*	1 < 2; 3 < 1, 2
B.Sc./HND	4.17	4.37	3.61	3.06		4.56***	1 > 3; 2 > 1, 3
Masters	3.55	3.73	3.17	3.24		6.92***	1 < 2; 2 > 1, 3
P.hD	2.57	3.15	3.35	3.32		15.34***	
<i>Income(N)</i>							
< 30000	4.12	3.58	3.12	3.32		5.46*	1 > 2, 3
31,000–100,000	3.21	3.35	3.76	3.21		13.25**	1 < 2, 3; 3 > 2
101,000–300,000	0.67	0.36	0.78	0.74		1.64	ns
> 300000	0.24	0.73	0.58	0.81		1.86	ns
<i>Other demographic characteristics</i>							
Age(mean)	44.5	46.7	44.2	47.8		41.2**	1 < 2; 3 < 1, 3
Gender(% male)	64.2	85.3	77.5	74.7	32.8***		1 < 2, 3; 3 < 2
Married %	53.1	72.4	66.8	68.4	26/3***		1 < 2, 3

\**p* .05; \*\**p* .01; \*\*\**p* .001. *ND* National diploma, *NCE* Nigeria certificate in education, *B.Sc.* Bachelor of science degree, *HND* Higher national diploma

**Table 3** Marginal effects of the model estimate in national identity, constructive patriotism, symbolic patriotism and uncritical patriotism ( $N=414$ )

	Deprivation	National ID	Constructive	Symbol	Uncritical	Total
<i>Step 1: Demographics</i>						
Age	0.12***	0.03***	0.06***	0.12***	0.07***	-0.08***
Gender(Male)	0.06	0.01	0.11	0.05	0.15	0.11
Married	0.25	0.08	0.04	0.01	0.04	0.06
$R^2$ Change	0.08	0.04	0.02	0.01	0.01	0.03
<i>Step 2: Employment</i>						
Government	0.23***	-0.07***	-0.09***	-0.16***	-0.11***	-0.16***
Private	0.16***	-0.18***	-0.21***	-0.14***	-0.20***	-0.13***
Self-employed	0.05	0.12**	0.08**	0.22**	0.17**	0.14**
$R^2$ Change	0.17	0.14	0.12	0.26	0.15	0.32
<i>Step 3: Education</i>						
Secondary	0.06***	0.08***	0.03***	0.01***	0.08***	0.05***
ND/NCE	0.05***	-0.06	-0.11	-0.03	-0.09	-0.17
B.Sc./HND	0.09*	-0.14*	-0.05*	-0.12	-0.22*	-0.13*
Masters	0.18***	-0.12***	-0.11***	-0.09	-0.11***	-0.07***
PhD	0.31***	-0.05***	-0.12***	-0.07***	-0.06***	-0.03***
$R^2$ Change	0.02	0.04	0.12	0.23	0.16	0.15
<i>Step 4: Income(N)</i>						
< 30000	0.07***	-0.06***	-0.11***	-0.14***	-0.05***	-0.06***
31,000–100,000	0.03***	-0.23	-0.22	-0.31	-0.16	-0.25
101,000–300,000	0.15***	0.22	0.13	0.08	0.07	0.17
> 300000	-0.09***	0.31**	0.27**	0.13**	0.20**	0.24**
$R^2$ Change	0.11	0.07	0.11	0.21	0.09	0.22
<i>Step 5: Relationship with Migrant</i>						
Family members	0.23***	-0.22*	-0.08*	-0.17*	-0.13*	-0.14*
Friends	0.28***	-0.33***	-0.17***	-0.21***	-0.17***	-0.20***
Neighbours	0.15***	0.30	0.22	0.18	0.25	0.21
$R^2$ Change	0.18	0.12	0.09	0.06	0.13	0.18
<i>Step 6: Remittances</i>						
Benefitted from Remittances	0.05	-0.04**	-0.12**	-0.16**	-0.02**	-0.07**
$R^2$ Change	0.03	0.01	0.08	0.18	0.12	0.15
<i>Step 7: Deprivation</i>						
$R^2$ Change		-0.18***	-0.26***	-0.15***	-0.21	-0.27***
$R^2$ Change		0.23	0.17	0.23	0.19	0.37

\* $p \leq .05$ ; \*\* $p \leq .01$ ; \*\*\* $p \leq .001$ . ND=National Diploma, NCE=Nigeria Certificate in Education, B.Sc.=Bachelor of Science Degree, HND=Higher National Diploma

**Table 4** Marginal interactive effects of the model estimate in national identity, constructive patriotism, symbolic patriotism and uncritical patriotism ( $N = 414$ )

	Deprivation	National Identity	Constructive Patriotism	Symbol Patriotism	Uncritical Patriotism	Total Patriotism
<i>Step 1: Demographics</i>						
Age	0.12***	0.03***	0.06***	0.12***	0.07***	-0.08***
Gender(Male)	0.06	0.01	0.11	0.05	0.15	0.11
Married	0.25	0.08	0.04	0.01	0.04	0.06
$R^2$ Change	0.08	0.04	0.02	0.01	0.01	0.03
<i>Step 2: Government × Education</i>						
Government × Secondary	0.01*	0.12	0.05	0.16	0.09	0.14
Net Effect	0.0828	na	na	na	na	na
Government × NCE/ND	0.04**	0.22	0.37	0.20	0.17	0.23
Net Effect	0.1412	na	na	na	na	na
Government × B.Sc./HND	0.09**	-0.07**	-0.12**	-0.14**	-0.07**	-0.10**
Net Effect	0.2952	0.2996	-0.3236	na	-0.3796	-0.358
Government × Masters	0.14***	-0.33***	-0.21***	-0.25***	-0.18***	-0.22**
Net Effect	0.4992	0.8724	na	na	-0.5204	-0.5716
Government × PhD	0.23***	-0.42***	-0.34***	-0.30***	-0.31***	-0.37***
Net Effect	0.8344	1.0076	0.8452	-0.754	-0.8668	-0.8736
$R^2$ Change	0.02	0.24	0.27	0.25	0.22	0.28
<i>Step 3: Private × Education</i>						
Private × Secondary	0.21	0.36	0.34	0.46	0.20	0.41
Net Effect	na	na	na	na	na	na
Private × NCE/ND	0.06***	0.22	0.17	0.09	0.14	0.26
Net Effect	0.1592	na	na	na	na	na
Private × B.Sc./HND	0.03	0.43	0.31	0.23	0.22***	0.30***
Net Effect	na	na	na	na	0.1804	0.416
Private × Masters	0.25***	-0.21	-0.28**	-0.30	-0.25	-0.22***
Net Effect	0.635	na	na	na	na	-0.4704
Private × Ph.D	0.34***	-0.08	-0.12***	-0.12***	-0.16***	-0.18***
Net Effect	0.7988	na	-0.2884	-0.2884	-0.4512	-0.3576

Table 4 (continued)

	Deprivation	National Identity	Constructive Patriotism	Symbol Patriotism	Uncritical Patriotism	Total Patriotism
<i>R</i> <sup>2</sup> Change	0.03	0.12	0.35	0.22	0.14	0.17
Step4: <i>Government</i> × <i>Income</i>						
Government × < <i>N</i> 30,000	0.07**	-0.31***	-0.14***	-0.23***	-0.15***	-0.11***
Net Effect	0.2296	-0.7668	-0.4592	-0.6644	-0.392	-0.3108
Government × <i>N</i> 31,000- <i>N</i> 100,000	0.34***	-0.23	-0.27	-0.45	-0.11	0.18
Net Effect	0.8052	na	na	na	na	na
Government × <i>N</i> 101,000—300,000	0.22*	0.33	0.18	0.09	0.26	0.17
Net Effect	0.6516	na	na	na	na	na
Government × > <i>N</i> 300,000	-0.37***	0.03***	0.08***	0.02***	0.07***	0.05***
Net Effect	-0.9336	0.3784	0.3124	0.1757	0.3596	0.354
<i>R</i> <sup>2</sup> Change	0.08	0.16	0.06	0.11	0.10	0.13
Step 5: <i>Private</i> × <i>Income</i>						
Private × < <i>N</i> 30,000	0.06	-0.04**	-0.02**	-0.08**	-0.15**	-0.09**
Net Effect	na	-0.1328	-0.1764	-2856	-0.323	-0.2238
Private × <i>N</i> 31,000- <i>N</i> 100,000	0.11	-0.15	-0.27	-0.18	-0.16	-0.13
Net Effect	na	na	na	na	na	na
<i>Private</i> × <i>N</i> 101,000- <i>N</i> 300,000	0.08	0.22	0.18	0.28	0.25	0.22
Net Effect	na	na	na	na	na	na
Private × > <i>N</i> 300,000	-0.36***	0.17***	0.15***	0.23***	0.18***	0.12***
Net Effect	0.7452	0.6194	0.543	0.5486	0.5285	0.4584
<i>R</i> <sup>2</sup> Change	0.12	0.23	0.13	0.34	0.11	0.18

\**p* ≤ .05; \*\**p* ≤ .01; \*\*\**p* ≤ .001. *ND* National diploma, *NCE* Nigeria certificate in education, *B.Sc.* Bachelor of Science Degree, *HND* Higher national diploma

## Appendix 2

### Test for endogeneity

The explanatory variables of regression models of deprivation and patriotism were tested for endogeneity.

#### Model 1

**Table 5** Test of check for endogeneity of regressor *Benefit*

Parameter estimate						
Variable	Label	DF	Parameter estimate	Standard error	T value	Pr >  t
Intercept	Intercept	2	2542.36217	925.34872	2.74	< .000111
Benefit		2	32.87214	5.31782	6.18	< .000111
$v_1$	Residual	2	213.62106	210.92518	1.01	< .000111

Only the portion of major relevance to the current interpretation is presented. Degree of freedom were calculated using the formular  $L_2 - G$  where  $L_2=3$  because there are three instruments used;  $G$  = number of suspected endogeneous variables = 1. Variable *Benefit* is truly exogeneous at 1% significant level ( $p$ -value < 0.0001).  $H_0$  is accepted

**Table 6** Test of check for endogeneity of regressor *Deprivation*

Parameter estimate						
Variable	Label	DF	Parameter estimate	Standard error	T value	Pr >  t
Intercept	Intercept	2	1423.16215	628.56278	2.26	< .000111
deprivation		2	-20.32110	5.81002	-3.49	< .000111
Benefit		2	-33.24376	10.53148	-3.15	< .000111
$v_2$	Residual	2	-146.25126	139.92514	-1.04	< .000111

Only the portion of major relevance to the current interpretation is presented. Degree of freedom were calculated using the formular  $L_2 - G$  where  $L_2=4$  because there are four instruments used;  $G$  = number of suspected endogeneous variables = 2. Variable *Deprivation* is truly exogeneous at 1% significant level ( $p$ -value < 0.0001).  $H_0$  is accepted

**Table 7** Test of check for endogeneity of regressor *Benefit*

Parameter Estimate						
Variable	Label	DF	Parameter estimate	Standard error	T value	Pr >  t
Intercept	Intercept	2	267.32160	83.72161	3.19	< .00011
deprivation		2	-40.17825	83.72161	2.21	< .00011
Benefit		2	-87.13182	40.3345	2.16	< .00011
$v_3$	Residual	2	-315.82178	282.97628	1.11	< .00011

Only the portion of major relevance to the current interpretation is presented. Degree of freedom were calculated using the formular  $L_2 - G$  where  $L_2=4$  because there are four instruments used;  $G$  = number of suspected endogeneous variables = 2. Variable *Benefit* is truly exogeneous at 1% significant level ( $p$ -value < 0.0001).  $H_0$  is accepted

**Table 8** Test for weak instrument benefit\_DF in model 1

Analysis of variance						
	DF	Sum of square	Mean square	F value	Pr > F	
Model	2	60.36472	30.18236	73.89	< .0001	
Error	412	168.28757	0.40846			
Corrected Total	414	228.65229				
Parameter estimate						
Variable	Label	DF	Parameter estimate	Standard error	T value	Pr >  t
Intercept	Intercept	2	-6.25727	1.23051	-508	< .000111
Financial inclusion		2	0.28621	0.01256	22.78	< .000111
Number of bankank branches		2	0.32462	0.03275	9.91	< .000111
Benefit_FD		2	0.62594	0.5755	10.87	< .000111

**Table 9** Test for weak instrument deprivation\_DF in model 2

Analysis of variance						
Source	DF	Sum of square	Mean square	F value	Pr > F	
Model	2	158.25578	79.12789	26.17	< .0001	
Error	412	1245.67623	3.02348			
Corrected Total	414	1403.93201				
Parameter estimates						
Variable	Label	DF	Parameter estimate	Standard error	T value	Pr >  t
Intercept	Intercept	2	32.57734	7.34218	4.43	< .000111
Health		2	-0.42341	0.05512	7.68	< .000111
Financial inclusion		2	-0.32172	0.01327	24.24	< .000111
Deprivation_FD			0.48216	0.05039	9.56	< .0001
Benefit_FD		2	0.02110	0.32146	0.06	0.9214

$$Deprivation_i = \beta_1 + \beta_2 Benefit_i + \beta_3 X_i + \varepsilon_i \quad (1)$$

where  $Deprivation_i$  is the average score variable on the extent of deprivation felt relative to achievement of migrant friends, family and neighbour living abroad,  $Benefit$  indicates total average score on benefit received from migrant living abroad,  $X_i$  are respondent's demographic and socio-economic characteristics, and  $\varepsilon_i$  is error term

Model 2

**Table 10** Test for weak instrument Benefit\_DF in model 2

Analysis of Variance						
Source	DF	Sum of square	Mean square	F Value	Pr > F	
Model	2	294.42677	147.21338	33.56	< .0001	
Error	412	807.22914	4.38647			
Corrected Total	414	2101.65591				
Parameter estimates						
Variable	Label	DF	Parameter estimate	Standard error	T value	Pr >  t
Intercept	Intercept	2	41.33271	7.22681	5.71	< .000111
Health		2	-0.26166	0.07271	3.62	< .000111
Financial inclusion		2	-0.38161	0.05342	7.14	< .000111
Deprivation_FD			0.00032466	0.01995	0.01	0.9258
Benefit_FD		2	-0.568031	0.04234	13.41	< .000111

**Table 11** Box's test of equality of covariance matrices<sup>a</sup>

Box's M	16.422
F	1.212
Sig	0.231

Test the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups

<sup>a</sup>Design: intercept + Migrant Groups

$$Patriotism_i = \gamma_1 + \gamma_2 deprivation_i + \gamma_3 Benefit_i + \gamma_4 X_i + \epsilon_i \quad (2)$$

where  $Patriotism_i$  is average total score of level of individual patriotism towards Nigeria. Other variables are as defined in model 1.

Suspected endogenous variable in model 1 (i.e Benefit) was regressed on three instrumental variables: financial inclusion, number of bank branches and first difference of Benefit ( $i$  :  $eBenefit\_FD$ ) and residual ( $v_1$ ) obtained, saved and used as an explanatory variable in the main regression.  $H_0$  :  $Benefit$  is exogeneous while  $H_1$  :  $Benefit$  is endogeneous (Wooldridge 2002).

Suspected endogenous variables in model 2 (i.e deprivation, benefit) are separately regressed on four instrumental variables (self-reported health status, financial inclusion, first difference of deprivation ( $Dep\_FD$ ) and first difference of benefit ( $i$  :  $eBenefit\_FD$ ), and residuals ( $v_2, v_3$ ) obtained, saved and used as an explanatory variable in the main regression.  $H_0$  :  $deprivation, Benefit$  is exogeneous while  $H_1$  :  $deprivation, Benefit$  is endogeneous (Wooldridge 2002) (Tables 5 , 6, 7, 8, 9, 10,11).



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**Data availability** The data that support the findings of this study are not openly available. Data were primarily sourced through interview and questionnaire from individuals and are available from the corresponding author upon reasonable request.

## Declarations

**Conflict of interest** The authors declared that there is no conflict of interest among the authors as regards any aspect of the research.

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