

## COMPARATIVE ANALYSIS OF SOCIO-ECONOMIC AND CULTURAL CHARACTERISTICS OF RESIDENTS ON HOUSING PATTERNS IN INTERNATIONAL BORDER TOWNS OF OGUN STATE, NIGERIA

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### Abstract

Appropriate housing policy that enhances quality and standard of living in international border towns requires understanding the socio-economic and cultural factors of residents in the selected towns. However, research to this effect in international border between Nigeria and Benin Republic is either scarce or not available; hence the crux of the current study. Three towns at Nigeria-Benin Republic international border, namely Idi-Iroko, located within Ipokia Local Government Areas (LGA), Ohunbe town is in Yewa North LGA, while Ilara, falls within the jurisdiction of Imeko Afon LGA. These three towns are within the three LGAs in Ogun State that share border with the Benin Republic. It should be noted that an adequate study of these three border towns was considered as part of the research in order to draw a logical conclusion on variables germane to the study. The three towns were purposively selected given their high population sizes, location of government agencies and concentration of economic activities. The study employed a representative sample size of 361 households. Analysis of Variance (ANOVA) Model was developed to empirically carryout such differential analysis at 5% level of significance. The results suggest that socio-economic and cultural conditions of residents across border towns are significantly different from other. However, intra-town significance difference depends on level of comparison between towns. The study found that housing formation patterns is relative to residents' socio-economic and cultural characteristics in international border towns. The study recommended that socio-economic and cultural factors of residents should be given special focus in the formulation of government housing policies. This will encourage quality of life and standard of living in international border towns.

**Keywords:** Cultural features, Housing, Housing pattern, International border towns, Socio-economic

## 1. INTRODUCTION

Housing patterns in border areas are related to prevalent building processes and takes cognizance on the culture of household compositions (Van Gent & Musterd, 2016). Culture indicates the sources and means of collecting, storage, broadcasting and utilisation knowledge (Salama, 2006). It is also an important factor in assessing or detecting patterns of human residential formation. Understanding the culture of certain area revealed spatial quality of the environment.

A housing development pattern is the form of the spatial characteristic of an area at a particular time. It evolves as a gradual process in relation to the activities carried out in that region. Urbanization and its attendant change in land utilization and topography have unfavourable impact on natural assets and socioeconomic patterns (Ourng & Rodrigues, 2012). The spatial pattern comprises of physical, social and legal characteristics (Suditua & Vâlceanu, 2013; Klapka, Halas & Kune, 2010; Ojo, Opoko, Olotuah & Oluwatayo, 2019; Stasolla & Gamba, 2007) noted that adopting geographical information system in analysing land matter will reduce uneven development. That space can be delivered, replicated, expanded and controlled by poor people over time shows it is not static (Gondwe & Ayenagbo, 2013).

Border towns are complex in nature. They reflect the ways of the people. The factors that contribute to the culture of border communities include communication, migration and trade. The study of a border town is accomplished with languages, communication arts, philosophy, history, musicology and popular culture and law contributes significantly to activities and nature of the environment (Bonchuk, 2012). The cultural combination of the border communities is very important for cross-border changes. Nigeria- Benin Republic border was partition in 1889 through *Shabe* in Yoruba side while Dahomey in French and the eastern *Shabe* villages is part of British in Nigeria (Blum, 2014). The traditional culture of border communities has been diluted by others beliefs and interaction with people of different cultural backgrounds, notwithstanding residents still adhered to their cultural backgrounds (Owumi & Raji, 2013). The border settlements are characterized by sustained two-way contacts and links between both countries due to the closeness of border towns to borders points (Aluko, 2012).

The porosity of borders encourages more people with different cultural background to interact. Hence there is no particular dominant culture in border towns. Borders therefore, reflect neutral mixed cultural areas due to intense economic activities that affect decision making (Owumi & Raji, 2013). The current Nigeria-Benin Republic border is a colonial remnant, separating a homogeneous socio-cultural group. Language and ethics are similar along the border. The Yorubas' are in the south together with the *Gun* and *Ajo* speaking group; the *Beriba*'s in the centre and the Fulani's and Hausas in the northern parts of both countries (Blum, 2014). The border region is a complex milieu of cultures, people, language and tradition. Development patterns within a settlement are associated with the tenure status, types of housing and neighbourhood configuration.

The current paper investigates the socio-economic and cultural characteristics of residents in selected international border towns in Ogun State, Nigeria and their impact on the housing development patterns in these towns.

## 2. LITERATURE REVIEW

Settlements are determined by the agglomeration of houses and spaces within them. Sarkar (2010) further pointed out that conditions in various settlements like physical components, landscape, atmosphere and water accessibility, socio-economic variables, religion and security synthesis may differ. The development of the physical structure in an area exhibits special patterns in relation to circulation and location of activities that are found mainly on social dimensions. Eldefrawi (2013) further analysed physical forms including streets, plots and building patterns as a results of cultural and social beliefs.

Suburban housing depends on settlement development. Housing development in a particular area depends on repetition and variation over time, at different scales in relation to the arrangement of the building. Therefore, housing type over a long period of time gives rise to existing settlement pattern. The pattern of human settlement comprises two separate but related components: division of land among owners and arrangement of buildings on land (Sekaran, 2003). Land division among residents in an area depends on the initiatives of the family head who holds the tenure system while arrangement depends on the intervention of planning authority in monitoring new development.

Border development is a brand new idea from different contributors with varieties of terms like fringe businesses, development triangles, development zones and financial corridor (Kudo, 2009). Blum (2014) described socioeconomic activities along Nigeria- Benin Republic as rapid economic activities cantered on the socio-economic composition of Yoruba culture. Recently around south and central parts of the border, the

Yoruba in line with the practice of foster relationship among Yoruba's residing between Benin-Nigeria regions.

Despite the political environment, residents have common socio-cultural background from both countries at the edge and share the infrastructural facilities, therefore foster commercial activities that encourage increase in population. The forces of socio-economic development, population change, culture and government policy were important tools in transforming border towns (Liverman, Varady, Chavez & Sanchez, 1999). Chabbi – Chemrouk (2013) investigated cross – cultural influences on settlement pattern and concluded that, cultural land scape, language, attitude etc accommodate changes in patterns of design and living condition.

Gbakeji and Rilwani (2009) :Opoko, Ibem & Adeyemi (2015) assessed socio-economic characteristics of neighbourhoods based on household income, occupational structure, age, sex, marital status and household size and concluded that residential characteristics of a neighbourhood is a function of the environment that determines individual socioeconomic activities. In another study, Taylor, Banda-Thole, & Mukuwa (2015) observed that cross-border economic activities influenced people to settle at Mwami border in Zambia. The reasons include a market that commands the economic environment with multiplier effects. Sustainable development of border areas needs a balance between economic, political, transport, socio-cultural, and environment (Wang, Cheng & Mo, 2014). Pick and Butler (1990) found that socio-economic inequality between US.-Mexico borderland were are caused by marginality at country borders, inconsistency development level at the border, remoteness of the border, and extent of economic interaction, modernization and integration. Spatial and functional environment give meaning to the idea of a trans-border region and unique in culture of people at the border (USAID /Mexico, 2013).

Eilenberg & Wadley (2009) studied livelihood strategies required in West Kalimantan, Indonesia border. This study demonstrates that individuals living in the borderland are regularly involved in territorial issues, building tight financial relations with individuals on the opposite side of that line. Moretti, Sateriano, Zitti & Salvati (2015) observed that a unique system of evaluating and planning different relations between rural frameworks and human settlements in Southern Europe fringe could be ineffective when concentrating on the individual, but eco-sustainable planning, incorporated with the numerous economic and social interests is a relevant approach to border land development. Bonchuk (2012) concluded that, various international borderlands in Nigeria are a beehive of economic activities; both legal and "illegal", but both form the economic activities and sources of livelihood to residents of border towns including hinterland.

## 2.1 Study Areas

The research covered selected border towns in Ogun State, Nigeria. The towns are: Idi-Iroko, Ohunbe and Ilara. Idi-Iroko town is located within Ipokia Local Government Areas (LGA). Ohunbe town is in Yewa North LGA, while Ilara, falls within the jurisdiction of Imeko Afon LGA. These three towns are within the three LGAs in Ogun State that share border with the Benin Republic. It should be noted that an adequate study of these three border towns was considered as part of the research in order to draw a logical conclusion on variables germane to the study.

An Analysis of Variance (ANOVA) model was used to empirically analyse whether statistical difference exists among the selected international border locations in terms of socio-economic and cultural characteristics of residents when deciding the pattern of housing formation in their neighbourhoods. An ANOVA model is a model that contains regressors which are mainly qualitative in nature and allows a researcher to determine whether there is statistical difference of means among groups, towns in this case, in respect of response variable (Cameron & Trivedi, 2009; Pallant, 2007; Gujrati, 2004). One-way ANOVA version was particularly utilized for the purpose of the study. The model was specifically developed through adjustments to an ANOVA Model adopted from Cameron and Trivedi (2009) specified as follows:

$$Y_i = \alpha + \beta_2 D_{2i} + \beta_3 D_{3i} + \varepsilon \dots \dots \dots (1) \text{(Cameron and Trivedi, 2009)}$$

Where  $Y_i$  = Dependent Variable;  $D$  = Dummy Variable,  $D_2$  = Dummy Variable value of "Second Category" (taking value of 2),  $D_3$  = Dummy Variable value of "Third Category" (taking value of 3),  $\beta_2$  and  $\beta_3$  are differential intercept coefficients of  $D_2$  and  $D_3$

After adjustments to equation 1, the study model is formulated as;

$$SOECO_i = \alpha + \beta LOC_i + \varepsilon \dots \dots \dots (1)$$

$$SOECO_i = \alpha + \beta_2 IDK_i + \beta_3 OHB_i + \varepsilon \dots \dots \dots (2)$$

Where  $SOECO$  =Socio-Economic and Cultural Features

- $LOC$  = Selected towns (Ordinal response: Dummy Variable)
- $IDK$  = Dummy Variable value of “Idi-Iroko Town” (taking value of 2)
- $OHB$  = Dummy Variable value of “Ohunbe Town” (taking value of 3)
- $\beta_2$  and  $\beta_3$  are differential intercept coefficients of  $IDK$  and  $OHB$
- $\alpha$  = intercept
- $\mathcal{E}$  = stochastic term and “ $i$ ” indicates that the data for the study is cross-sectional

It is important to state that there was inclusion of only two categories of factor variable out of three. This is necessary to avoid dummy variable trap, that is, a situation of perfect collinearity or perfect multicollinearity (Cameron & Trivedi, 2009). In addition, the null hypothesis to be tested is that there is no statistical difference in the mean scores of residents’ overall socio-economic and cultural features across the three selected towns. This is mathematically stated as thus:

$$H_0: \mu_1 \neq \mu_2 \neq \mu_3$$

Where,  $\mu$  = sample mean of  $i$ th location; 1 = Ilara; 2 = Idi – Iroko; 3 = Ohunbe

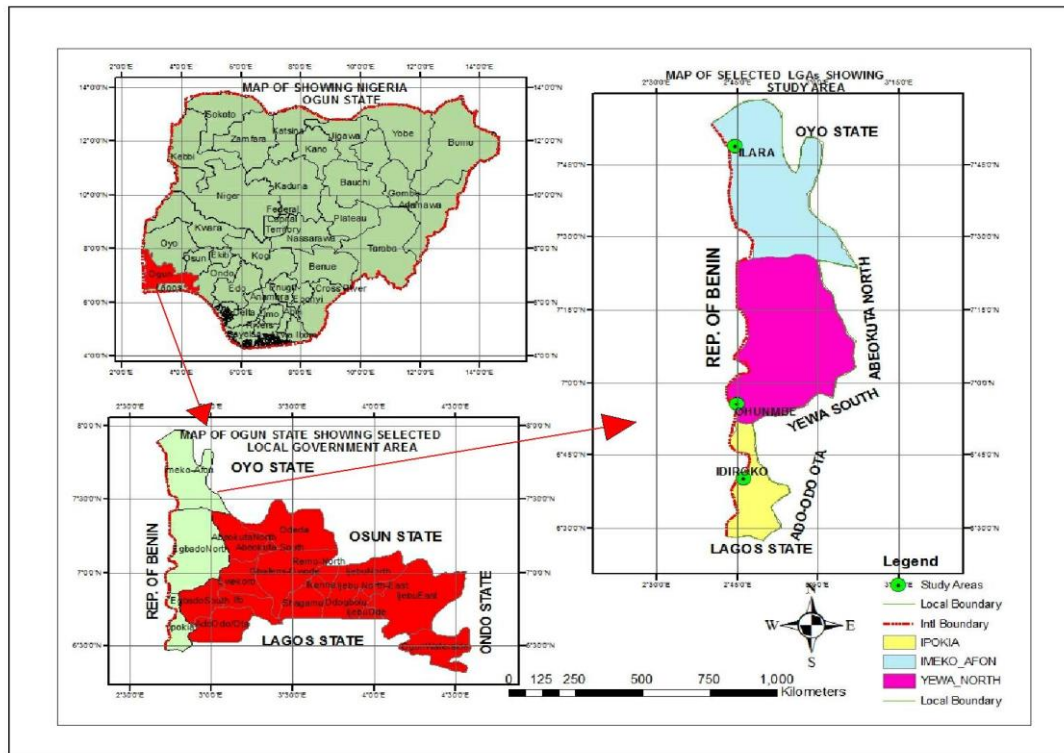
The cross-sectional data for the study was obtained from survey investigation in Ogun State, South-West Nigeria. In terms of the bearing on earth surface in the country, the State lies approximately between latitude 6.2°N and 7.8°N and longitude 3.0 °E and 5.0°E. It bounded to the west by the Republic of Benin, to the south by Lagos State; to the east by Ondo and Osun States; and to the north by Oyo State. It has twenty (20) Local Government Areas (LGAs). However, only local government areas with international boundaries were considered for this survey. There are three Local Government areas with international boundaries in Ogun State. These are Ipokia Local Government, Imeko Afon Local Government and Yewa North local government. Population wise, however, three towns were purposively selected from each of these LGAs. These are Idi-iroko (population; 25,415 people) Ilara, (population; 11,905 people) and Ohunbe (population; 2,935 people).

The international border areas in Ogun State constitute a large border area with a moderate growth rate (National Population Commission, 2010) which has followed the national trends of increasing suburbanization of jobs and people and more commuting within border towns (Sarkar, 2010).

### 3. METHODOLOGY

The existing base map of the settlements was generated through google earth (2017) which indicated that Idi-Iroko town has 4,111 buildings; Ilara town with 1,905 and ohunbe town have and 1,331 buildings respectively. More importantly, a pilot survey was conducted to identify habitable buildings on the map and to pre-test the study schedule in order to validate the process and research instruments. This process ensured that out of available total buildings in each town habitable buildings were easily identified. As a result, number of habitable-but-dwelling buildings observed in each town are Idi iroko - 3,802; Ilara - 1,480; and Ohunbe- 821 respectively. The total number (6,103) in the three towns, therefore, forms the puplation of the study. In addition, the map in figure 1 further illustrates geographical locations of the three selected local governments and towns for the study.

**Fig. 1: Map of Nigeria and Ogun State showing 20 Local Governments and subject site, 2018**



**Source: Survey and Geo-Informatics Department, Federal Polytechnic, Ilaro. Ogun State.**

The carving out of Ogun State map from the country map was indicated by first arrow while the second arrow depicts the derivation map of the three local governments at the international border between Nigeria and Republic of Benin. The three selected towns for the study from the study map were marked ; Ilara (blue); Ohunbe (purple); and Idi-Iroko (yellow). Lastly, it is important to mention that Ilara town is located in Imeko-Afon Local Government; Ohunbe in Yewa North Local Government; and Idi-Iroko in Ipokia Local Government.

The sample size for the study was determined through two way statistical approaches theorised by Cochran (1977) for a finite population. Firstly, sample size when the population is infinite was obtained through;

$$n_0 = \frac{z^2 pq}{e^2} \dots \dots \dots (1)$$

Where,  $n_0$  is the sample size,  $z$  is the selected critical value of desired confidence level,  $p$  is the estimated proportion of an attribute that is present in the population,  $q = 1 - p$  and  $e$  is the desired level of precision (Cochran, 1977).

The study assumes the maximum variability to be 50% ( $p = 0.5$ ) and taking 95% confidence level with  $\pm 5\%$  precision, the calculation for required sample size will be as follows;

$$p = 0.5 \text{ and hence } q = 1 - 0.5 = 0.5; e = 0.05; z = 1.96$$

So,

$$n_0 = \frac{(1.96)^2(0.5)(0.5)}{(0.05)^2}$$

$$n_0 = 384$$

$n_0$  derived is greater than 5% of the population size (6,103). There was need to use correction formula to calculate the final sample size. The second stage procedure thus utilised a correction formula (equation 2) below.

$$n = \frac{no}{1 + \frac{(no-1)}{N}} \dots \dots \dots (2)$$

Here,  $n_o = 384$  is the sample size derived from equation (1) and  $N = 6,103$  is the population size.

By interpolation, equation (2) becomes;

$$n = \frac{384}{1 + \frac{(384-1)}{6,103}}$$

$$n = 361$$

Hence, the appropriate and representative sample size for the study is 361. This represents the number of habitable buildings sampled through questionnaire from a sampling frame of 45 communities (being 20 from Idi-Iroko; 15 from Ilara; and 10 from Ohumbe respectively) by the residents; with housing unit as unit of analysis. Accordingly, the study employed proportional allocation method originally proposed by Bowley (1926) to determine sample size for each of the three towns under study. The formula is given as;

$$n_i = n \frac{N_i}{N}$$

Where  $n$  represents sample size (361),  $N_i$  represents population size of the  $i^{th}$  town (3,802 buildings in Idi-Iroko; 1,480 in Ilara; and 821 buildings in Ohunbe) and  $N$  represents the population size (6,103). Using the systematic sampling method, 5<sup>th</sup> observation after the first observation picked. All analyses are conducted at 5% level of significance. Table 1 depicts summary of sample size of residents by towns obtained via proportional allocation method.

**TABLE 1: Summary of Sample size of Residents by Towns**

S/N	Local Govt. Area	Settlements/ Towns	Population of buildings	Sample Size of Residents	
1	Ipokia	Idi-Iroko	3,802	224	
2	Imeko Afon	Ilara	1,480	87	
3	Yewa-North	Ohunbe	821	50	
	<b>TOTAL</b>		<b>6,103</b>	<b>361</b>	

Source: Field Survey, 2018

### 3.1 Presentation and Interpretation of Descriptive Results

**TABLE 2: Breakdown Aggregate of Questionnaire Distribution and Retrieval**

Town	Total Distributed Questionnaires	Total Retrieved Questionnaire	Retrieval Rate (%)
Idi-Iroko	224	174	77.7
Ilara	87	62	71.3
Ohunbe	50	38	76.00
Total	361	274	75.9

Source: Field Survey, 2018

**TABLE 3: Summary Statistics of Overall Socio-Economic and Cultural Features (SOECO)**

Location (LOC)	Frequency	Mean	Std. Dev.
Ilara	62	2.3667115	.43638049
Idi-Iroko	174	2.5514528	.42845076
Ohunbe	24	2.3401625	.35515525
Total	260	2.4878953	.4323413

Source: Field Survey, 2018

**TABLE 4: Personal Characteristics of Respondents**

S/N	Predominant Variables	Ilara		Idi-Iroko		Ohunbe		Total	
		Frequency No	(%)	Frequency No	(%)	Frequency No	(%)	Frequency No	(%)
1	<b>Age</b>								
	26 - 40	22	35.48	58	33.33	6	25	86	33.08
	41 - 55	25	40.35	77	44.25	11	45.83	113	43.43
2	<b>Ethnic Group</b>								
	Yoruba	52	83.87	144	82.76	21	87.5	217	83.46
3	<b>Religion</b>								
	Islam	35	56.45	93	53.45	14	58.33	142	54.62
4	<b>Education</b>								
	Secondary school	20	32.79	66	38.37	10	41.67	96	37.35
5	<b>Household size</b>	1 - 4	54.1	5 - 8	48.84	5 - 8	58.33	122	47.47
6	<b>Occupation</b>	32	51.61	87	50	10	41.67	129	49.62
	Self Employed								
7	<b>Income</b>	37	59.68	107	62.21	15	20.83	159	61.63
	No fix Amount								
8	<b>Year Stayed</b>	24	39.34	67	38.95	9	37.5	100	38.91
	5 - 10 years	18	29.51	51	29.65	7	29.17	76	29.57
	Over 10 years								

Source: Field Survey, 2018

Firstly, Table 2 illustrates that a retrieval rate of 75.9% was obtained for questionnaire instrument. However,

fourteen (14) questionnaires were found with missing response on key variables. The remaining 260 (72%) questionnaires were utilized for analysis. This rate is considered appropriate, adequate and sufficient for further analysis (Sekaran, 2003). Table 3 reveal that, the highest number (174 people) of the respondents whose socio-economic and cultural data were analysed come from Idi-Iroko due to it been with the highest population among the three towns selected for the study. Ilara town followed with 62 respondents and Ohunbe had 24 respondents.

Table 3 also shows that, the average mean score of overall socio-economic and cultural features was higher for Idi-Iroko (2.55) than other two towns, Ilara (2.37) and Ohunbe (2.34) respectively. This implies that, at average, there is difference in the level of socio-economic and cultural conditions among the three towns and that the conditions are higher in Idi-Iroko than other two towns. Meanwhile, the spread in variability of such conditions as shown by standard deviations are relatively higher in Ilara town than Idi-Iroko and Ohunbe towns. However, the credibility and reliability of the descriptive findings are subject to further empirical analysis with appropriate statistical techniques.

Table 4 revealed that majority of respondents were Yoruba's, from selected settlements, the housing patterns indicate typical southwest housing formation whereby buildings are together to promote mutual relationship. The level of education contributed to the housing development patterns, the respondents from three selected settlements possess secondary education that hinder their exposure and enlighten.

### 3.2 Presentation and Interpretation of Empirical Findings

**TABLE 5 ANOVA Regression Model Output Result**

Number of obs = 260  
 F( 2, 257) = 5.93  
 Prob > F = .0030  
 R-squared = .4410  
 Adj R-squared=0.3670

#### ANOVA Regression

SOECO	Coef.	Std. Err.	t	P> t	[95% Conf.
	Interval]				
Loc					
2	.1847413	.0627612	2.94	0.004	.0611495 .308333
3	-.0265494	.1020126	-0.26	0.795	-.2274364 .174337
cons	2.366711	.0538902	43.92	0.000	2.260589 2.472834

**Source: Field Survey, 2018**

- Notes: (1) Loc 2 = Idi-Iroko Town; Loc 3 = Ohunbe Town  
 (2) Control Category: Loc 1 (Ilara Town)

Information in Table 5 indicates empirical outcomes of the ANOVA regression conducted. Firstly, the probability of F- Statistics (.003) depicts that there is statistical difference in the mean score of overall socio-economic and cultural features across the three selected towns of the study. This implies that there exist significant variations in socio-economic and cultural features of residents in international border towns. The level of variability in the level of socio-economic and cultural features across the three towns was explained



by R-square value of 44%. Furthermore, Table 5 reveals the area of the differences. For instance, in terms of comparison, residents' socio-economic and cultural features are significantly higher in Idi-Iroko town than both in Ilara and Ohunbe towns. Moreover, the average value of residents' socio-economic and cultural features in Ohunbe town was lower compared to Ilara town; however, such difference appears statistically insignificant.

### **3.3. Discussion of Result and Implication of Findings**

Housing development programmes are exclusively with government, particularly in organized setting, but decisions in individual provision of housing have significant role in the way structure are laid in different places. In the main, home-owners decisions are significantly influenced by socio-economic and cultural factors [Cochran, 1977; Abou-korm, 1926; Amao & Ilesanmi, 2013; Ibem & Aduwo, 2013; Suditua & Vâlceanu, 2013; Klapka, Halas & Kune, 2010; Stasolla & Gamba, 2007; Omole, 2013].

Meanwhile, the research study on difference in socio-economic and cultural features of residents at Nigeria-Benin Republic international border towns up to date receives no attention. In other words, the current study empirically considers socio-economic and cultural factors in Table 4 such as sex, education, ethnicity, occupation, income, household size, proximity, and border location at aggregate level to assess whether there is difference among three selected towns.

It was discovered that there is statistical difference among the three selected international border towns, namely, Idi-Iroko town, Ilara town, and Ohunbe town in terms of socio-economic and cultural features. Idi-Iroko town was found statistically significant higher than other two towns whereas such statistical difference was absent between Ilara town and Ohunbe town. More importantly, the result indicates the rejection of the study null hypothesis that there is no difference in overall socio-economic and cultural features of residents in international border towns. The finding illuminates that such difference exists and differs across towns. Again, the finding implies that in terms of socio-economic and cultural factors at average level, residents in Idi-Iroko fare better than their counterparts in Ilara town and Ohunbe town when it comes to decisions on housing provision that resulted to settlement patterns.

In terms of unique contributions, the study discovered that there different housing development patterns in the study areas and socio-economic and cultural factors as determinants at Nigeria-Benin international border. Also, residents in Idi-Iroko town have better state of socio-economic and cultural conditions that, those in Ilara town and Ohunbe town. This suggests that socio-economic and cultural factors of residents require special focus in the formulation of government housing policies that encourage quality of life and standard of living in these towns connecting Nigeria and Benin Republic. However, decomposition of residents according to social class in each town and ethnic group heterogeneity were unconsidered by the current research. Although the effect of this was smoothed out by adequate consideration of town with high population and diverse state of socio-economic and cultural factors the social class decomposition and ethnic group heterogeneity provide grounds for future research.

## **4. CONCLUSION**

Socio-economic and cultural factors have been found by extant literature as significant predictors of unregulated housing formation patterns in international borders. The current study strengthens prior findings through examination of existence of significant difference in socio-economic and cultural features across international border towns. The study was particularly conducted in international neighbouring border towns between Nigeria and Benin-Republic. Evidence from the study findings suggests that socio-economic and cultural conditions of residents across border towns are significantly different.

However, intra-town significance difference depends on level of comparison between towns. Therefore, housing formation patterns relative to residents' socio-economic and cultural factors differ significantly across international border towns. The study recommends that socio-economic and cultural factors of residents should be given special focus in the formulation of government housing policies. This will encourage quality of life and standard of living in international border towns.

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