A Geographically Weighted Regression Analysis of Barriers to Youth's Participation in Local Development Planning in Gauteng Province, South Africa

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Abstract

With South Africa having a history of youth activism and a predominantly youthful population, this paper investigates why the youth (18-34 years) do not participate in local development planning in Gauteng Province. The main source of data used in this study was the 2015/2016 QoL data of the Gauteng City-Region Observatory (GCRO). Results across Gauteng show that the majority of the youth do not participate in ward committee (WC), community development forum (CDF), and integrated development planning (IDP) meetings. The geographically weighted regression (GWR) approach proved important in allowing us to investigate the spatial variation in non-attendance at WC meetings and the heterogeneity role of the predictor variables over the study area. The GWR results show that the percentage of employed youth, average household income, the percentage of youth who have never interacted with government, the percentage of youth dissatisfied with the local councillor, and the average educational level of the youth emerged as barriers to participation in WC meetings. While results for non-participation in CDF meetings had no significant localised GWR results, compared to those for WC meetings, common barriers (as in the ordinary least squares (OLS) model) to participation in CDF meetings were, for instance, the youth's educational level and the lack of interaction with local government. Even according to the OLS model, the results of IDP meetings were not robust, and could not therefore be interpreted. Overall, however, these results are useful in spurring spatially-targeted – either region-wide or localised – policies.

***Keywords**: local development planning, public participation, youth participation, geographical weighted regression, Gauteng, South Africa*

1. Introduction

Acknowledging that public participation is crucial for a healthy democracy, the South African government has promoted bottom-up development planning since 1994, with public participation being a critical aspect of the developmental state at all levels (COGTA, 2012; COGTA, 2019). Many scholars agree that the exclusion of the youth in local development planning can have far-reaching implications for local communities (e.g., no benefits issuing

from demographic dividends) (Ben-Attar, 2010; Musarurwa, 2018; African Development Bank, AfDB, 2012).

Yet, the available data from the Independent Electoral Commission (IEC, 2019) show that of 1,306,869 youth (18-29 years and of voting age in 2016) in Gauteng province who cared to register as voters in the 2016 local government elections, even fewer, that is, only 715,419 of the youth (18-29 years) – representing 55% – turned out to exercise their civic duty on the voting day. Khuzwayo (2011) decried the lack of full participation of the youth in service delivery projects, such as the IDP, as an anathema to the democratic constitutional imperatives, which are also enshrined in the various forms of municipal legislation. He blames the time-consuming bureaucratic channels of the protocols that the youth have to deal with, and the lack of ineffective feedback and capacitation of local youth development structures, for example.

This paper adopts GWR analysis that has the advantage of allowing for the spatial heterogeneity patterns exhibited by predictors of youth non-participation in local development planning. Focusing on Gauteng province, the paper also includes and tests the contribution of predictor variables – for example, educational levels and employment rates – that are considered among the greatest barriers facing many countries today and preventing them from benefiting from demographic dividends (Fox, Senbet, & Simbanegavi, 2016). The paper addresses the following key questions: What are the levels of youth's non-participation or lack of involvement in the state-led local development planning process across Gauteng? What are the correlates of youth non-participation in local development planning across Gauteng? What are the spatial patterns of youth non-participation and related predictors in local development planning across Gauteng?

The paper is structured as follows: a review of the literature is covered in the second section; the third section covers the description of data and methods; while the fourth section covers the presentation of findings and related discussions. The last section concludes the paper.

2. Ward-level development planning processes in South Africa

Public participation is an inclusive concept and is credited as an important ingredient in bringing together all stakeholders before, during and after development planning (Maphunye and Mafunisa, 2008). Without it, the planning fraternity envisages that the plans will either be rejected or lead to unsustainable development. In South Africa, Booysen (2013) notes less involvement, especially by the black majority, in community engagements with the government of this country. She adds that the only exception to the lack of community engagement is the widespread citizen endorsement of protest action in the form of community-based service delivery protests (Booysen, 2013). An enabling environment that allows for

public participation to succeed or not, comprises a range of legal, political, economic and socio-cultural factors (Malena, 2006).

This paper focuses on three ward-level development planning processes. First, WC meetings, convened by the ward councillor, serve the following statutory roles: "representing the community on the compilation and implementation of the IDP; ensuring a constructive and harmonious interaction between the municipality and the community; attending to all matters that affect and benefit the community; acting in the best interests of the community; and ensuring active participation of the community in the municipality's budgetary process" (CoGTA 2019, para. 5). Second, CDF meetings are also important for community engagement and participation in development planning matters. CDF meetings provide opportunities for coordination with community-based organizations, NGOs, and other local, provincial, and national government departments that are involved in local communities (Hartslief, 2009). Third, IDP meetings are anchored around the prevailing IDP which represents the needs and aspirations of all interest groups in the respective wards (SALGA, 2015). The preparation and implementation of the above-mentioned local development planning processes are guided by various legislations, such as the Municipal Structures Act 1998 (RSA, 1998) and the Municipal Systems Act, 2000 (RSA, 2000).

A review of the literature identified the following as possible factors that influence public participation. Maphunye and Mafunisa (2008, p. 467) cite the following: the "vast distances" that the citizens have to travel to attend public participation meetings as a result of the size of the municipality or ward; "participation fatigue"; the red tape and the bureaucratic nature of public participation; lack of accountability and poor communications by local councillors or mere "non-participation by ward councillors" in the public participation process; and "marginalized groups" that are not integrated into the public participation process.

Others are the lack of special effort by municipalities to run a successful inclusive public participation campaign that ensures that the unemployed are included (Mchunu 2012); loss of confidence or dissatisfaction with local government performance (Cheruiyot, Wray, & Katumba, 2015; Cheruiyot, Katumba, & Wray, 2019); and lukewarm attention to the issue of public participation, especially in the sphere of not adherence to public participation regulations (Molepo et al. 2015). Naidoo and Ramphal (2018) cite others as lack of accountability and transparency by local governments, lack of knowledge with respect to the appropriate culture, and lack of adequate capacity for effective communication and gender representation, as well as unhealthy power struggles among stakeholders. Segktla (2016) adds the people's perception to see failure in linking their participation in the development processes and meaningful impacts or benefits as another reason.

3. Study area, data and methods

3.1. Study area and data

The paper used survey data obtained from the GCRO (GCRO, 2016). The survey interviewed adults, 18 years and above, at the household level. By focusing on the youth (18-34 years) alone, the data preparation yielded a sample size of 12,836 youth from the original sample size of 30,002 respondents interviewed across Gauteng province. The data were geocoded at the point of the interview, with ward-level representation achieved for all the municipalities and across the province. For a complete review of the data methodology, see GCRO (2016). The spatial analysis focused on 529 wards that cover the entire Gauteng province as per the Municipal Demarcation Board (MDB) 2016 municipal boundaries (MDB, 2016). Figure 1 shows the study area.

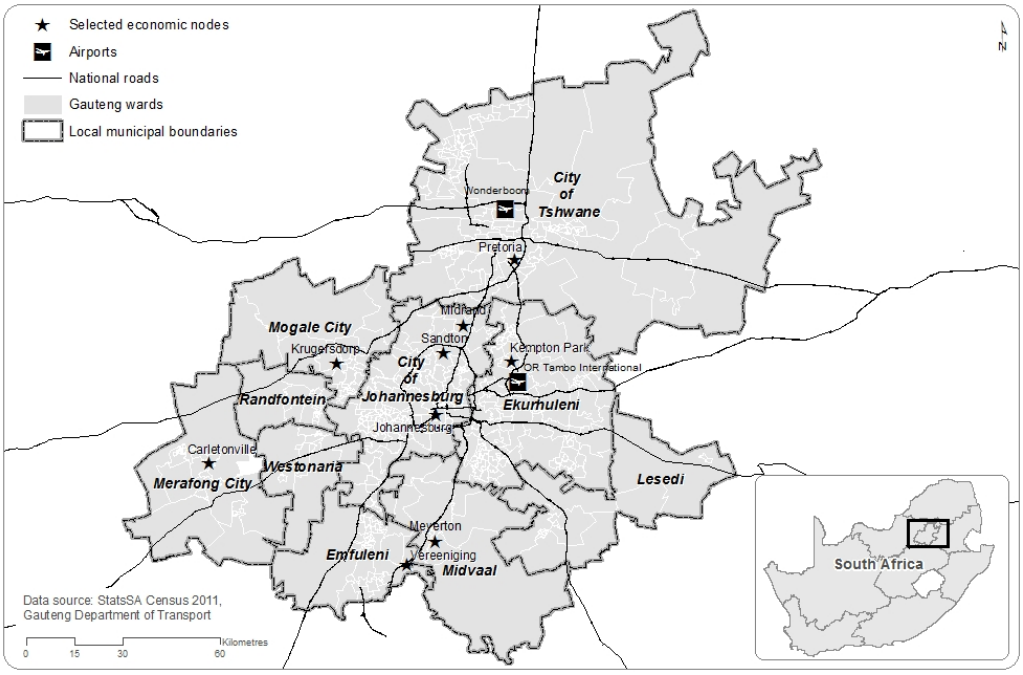

Figure 1. Gauteng province – the study area (Source: Cheruiyot, Katumba &Wray, 2019)

Our dependent variables were measured as the percentage of youth who did not attend WC meetings, the percentage of youth who did not attend CDF meetings, and the percentage of youth who did not attend IDP meetings. Several predictor variables (correlates) were hypothesized as explaining the pattern and the level of youth non-participation in local development planning. The choice of variables was largely determined by the existing literature and empirical work (see section 2 of this paper) and data availability in the existing QoL database of the GCRO. Table 1 shows the univariate statistics of the model variables used in the study.

Table 1. Univariate statistics of model variables

Variable	N	Min	Max	Mean	Median	Std. Dev
Dependent variables						
Percentage who did not attend WC meetings (DV1)	529	0	100	70.62	71.04	20.73
Percentage who did not attend CDF meetings (DV2)	529	45.72	100	91.12	92.76	8.58
Percentage who did not attend IDP meetings (DV3)	529	67.48	100	98.23	100	3.59
Predictor variables						
Percentage employed	529	0	100	47.08	46.06	19.15
Percentage female-headed households	529	0.07	100	59.05	48.90	13.70
Average household income (in Rands)	529	178	170,667	3,555	3,293	2,451
Percentage who are Black	529	0	100	82.16	100	26.40
Percentage who are Coloured	529	0	93.27	2.45	0	9.36
Percentage who are Asian/Indian	529	0	80.20	1.88	0	6.76
Percentage who are White	529	0	13.70	0.23	0	1.07
Percentage born in Gauteng	529	0	100	65.92	68.96	19.52
Percentage born in another SA province	529	0	73.92	26.04	23.52	16.73
Percentage foreign born	529	0	55.95	8.04	5.53	8.96
Percentage who are disabled	529	0	32.65	2.86	0	4.27
Average (in years) educational level	529	0	10.22	11.90	11.63	1.26
Percentage who did not know the local councillor	529	0	100	46.91	43.64	22.75
Percentage dissatisfied with local government performance	529	0	100	65.91	66.67	20.44
Percentage who had never interacted with government	529	0	65.50	62.44	61.97	2.84
Percentage who thought they could not influence development	529	0	94.78	31.78	31.25	14.18

3.2. Choice of analytical techniques

As a first step, diagnostic tests for stationarity in the predictor variables were undertaken to decide on which types of model were suitable for estimating the three models based on the survey data. The three models were: Model 1 (for DV1), Model 2 (for DV2), and Model 3 (for DV3). Only Model 1 had a statistically significant Koenker (studentized Breusch-Pagan) test statistic of 56.959 (p<0.01), implying that the predictor variables are non-stationary. Both Model 2's and Model 3's Koenker (studentized Breusch-Pagan) test statistics were equal to 15.710368 (p = 0.265) and 15.8062 (p = 0.260), respectively. Based on these results, the paper proceeded to employ a GWR estimation for Model 1 and ordinary least squares (OLS) analyses for Models 2 and 3.

The GWR model [Eq. 1] recognizes non-stationarity, that is, "where locally weighted regression coefficients move away from their global values" in the data across space (Bivand, 2022, p. 1).

$$\mathbf{y}_i = \Sigma_k \boldsymbol{\beta}_k (\mathbf{u}_i,\mathbf{v}_i)\mathbf{x}_{k,i} + \boldsymbol{\varepsilon}_i \quad [1]$$

In Eq. [1], $\mathbf{y}_i$ is the dependent to be estimated, the term $\Sigma_k \boldsymbol{\beta}_k (\mathbf{u}_i,\mathbf{v}_i)\mathbf{x}_{k,i}$ incorporates k predictors that are allowed to have varying coefficients, $\boldsymbol{\beta}_k$ are varying regressing coefficients for k correlates, $\boldsymbol{\varepsilon}_i$ is the Gaussian random error at location i, and $(\mathbf{u}_i,\mathbf{v}_i)$ is the x-y coordinate of the i^{th} location. Given that the objective of the present paper was to analyse the explanatory ability of variables in local areas, GWR was considered to be suitable for examining such spatially varying relationships in the context of youth non-participation in local development planning (Fotheringham, Charlton, & Brunsdon, 2002). The paper used an adaptive bisquare kernel as an iterative approach to determine the number of nearest neighbours as this allowed for the Akaike Information Criterion (AIC) to be minimized (Fotheringham, Brunsdon, and Charlton, 2002).

The OLS model assumes the following form:

$$\mathbf{Y} = \mathbf{X}\boldsymbol{\beta} + \boldsymbol{\varepsilon} \quad [2]$$

where Y and $\boldsymbol{\varepsilon}$ are *nx1* vectors of the dependent variables and the errors of the observations and **X** is a *nxp* matrix of the predictor variables. **B** is a set of regression coefficients, including the intercept. Data was analysed in MGWR v. 2.2.1 and GeoDa software programmes, while the maps were produced in ArcGIS pro software.

4. Findings and related discussions

4.1. Descriptive analysis

Descriptive statistics show the means for youth who did not attend the WC meetings, CDF meetings, and IDP meetings as 70.61%, 91.11%, and 98.22%, respectively. The lowest percentage of the youth who did not attend the WC meetings, CDF meetings, and IDP meetings was zero (0%), 45.72%, and 67.48%, respectively (see Table 1). Figures 2(a), 2(b) and 2(c) map the percentage of the youth who did not attend these local development planning meetings. By setting the legend to show equal categories and choosing a suitable colour ramp for the three maps, it was possible to distinguish the level of non-participation by the youth from the three maps (Mennis, 2006).

Figure 2(a) shows that the WC meetings were better attended, followed by attendance at the CDF meetings (Figure 2(b)), and lastly, attendance at the IDP meetings (Figure 2(c)). By selecting higher values of more than 70% non-attendance in the attribute table in ArcGIS Pro's shapefile, non-attendance at WC meetings appeared dominant in the core of the province. CDF meetings are better attended in the northwest of the province, while non-attendance at IDP meetings is widespread in the province. The three dependent variables – DV1, DV2, and DV3 – were statistically clustered with global Moran's *I* value of 0.276 (p<0.001), 0.080 (p<0.001), and 0.018 (p<0.05), respectively.

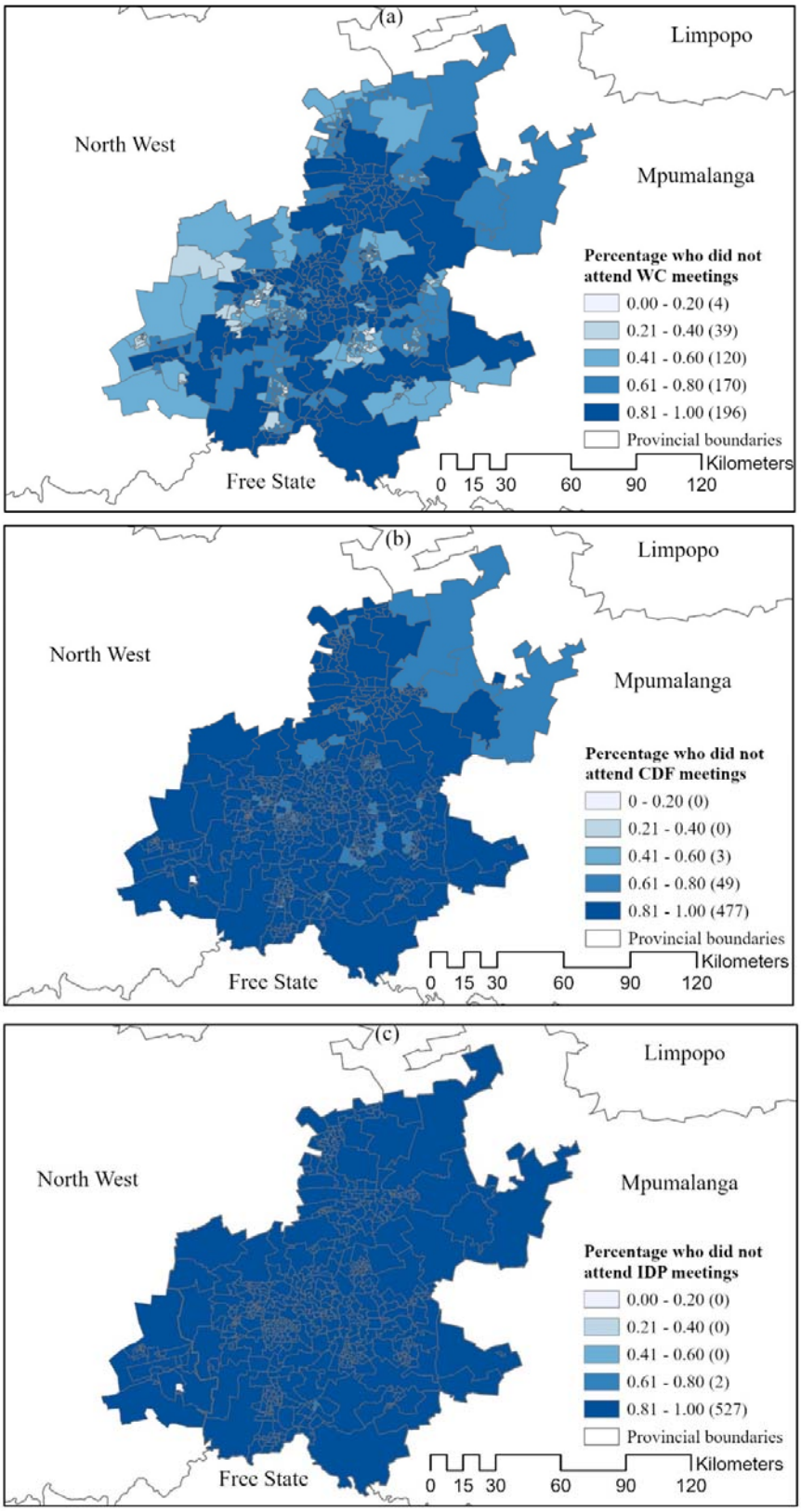

Figure 2. Percentage who did not attend WC meetings (2a), Percentage who did not attend CDF meetings (2b); and Percentage who did not attend IDP meetings (2c). Note: The values in brackets in the legend show the number of wards per class.

4.2. Scatter plot matrix analysis

A scatter plot matrix that shows the linear association between the relevant variables was also constructed. Figure 3 shows the magnitude and sign of the slope in each of the scatterplots, and the extent to which this points to a significant bivariate relationship. The key scatter plots in the matrix are the bivariate relationships between the percentage of respondents who did not attend WC meetings (Ward_N – the first item on the x-axis) and the first four variables on the y-axis. These four variables represent the percentage born in Gauteng (GP_Born), the percentage who are disabled (Per_Dis), the average household income in Rands (HH_Y), and the percentage employed (Per_Emplo), respectively.

The added lowess smoother (i.e., non-linear curves) in the scatter plot identify potential non-linearity in the data. For example, the relationship between Ward_N and Per_Dis, as shown by the lowess smoother in Figure 3, is negative at the lower values and flattens out towards the higher values. This suggests that the relationship between the two variables exhibits a strong negative bivariate relationship at the lower values, whereas the relationship suggests a weak to no bivariate relationship towards the higher values.

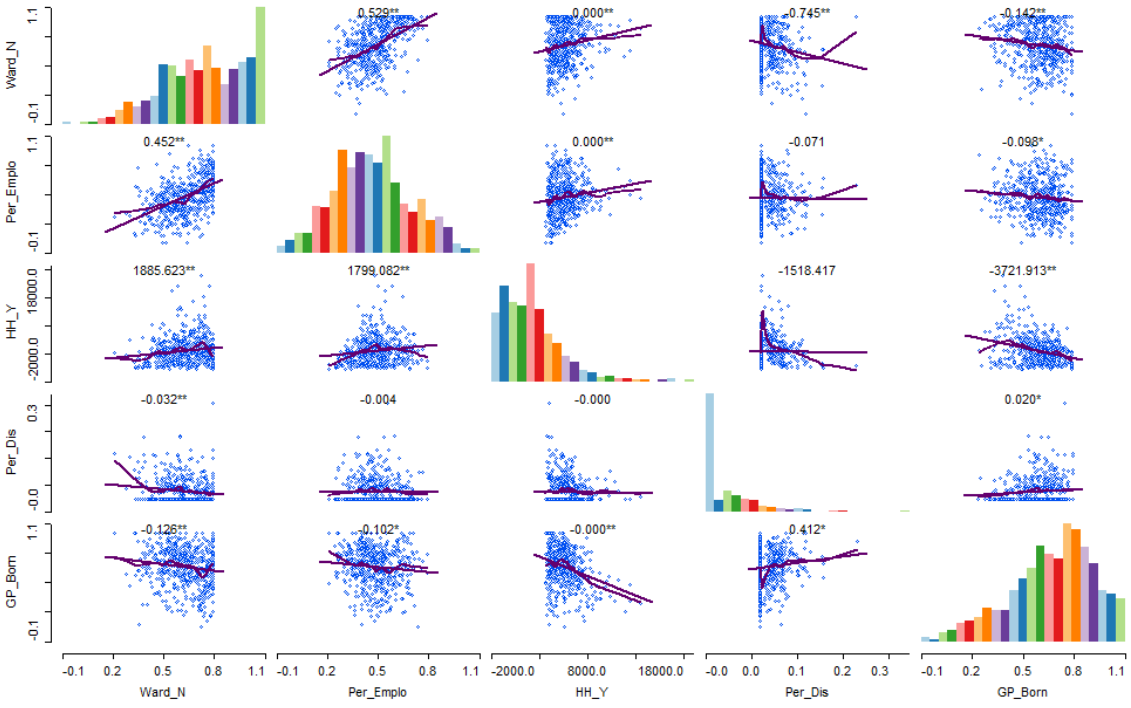

Figure 3. Scatterplot matrix for selected variables. Note: ** and * as 1% and 5% statistical significance, respectively.

4.3. Barriers to participation of youth in local development planning

This section focuses on the results, whereby we regressed the three dependent variables on the predictor variables in Table 1 in turn. The three models are Model 1 (for DV1), Model 2 (for DV2), and Model 3 (for DV3).

Some of the results of the diagnostic are shown in Table 3, where for Model 1, the lower Akaike Information Criterion$_c$ (AIC_c) for the GWR model compared to the $AIC_{c\ for}$ the OLS model (this is called Global Regression in MGWR software) further confirms the superiority of the GWR model over the OLS model. The GWR model has a higher adjusted R^2 (= 0.597) compared to the adjusted R^2 of 0.535 for the OLS model. In addition, for the standardised residuals (from the GWR model) Moran's *I* (= 0.068) for Model 1 was shown to be statistically insignificant, which indicates that no spatial autocorrelation was evident in the model residuals. Similarly, given that the VIF values for all the predictor variables were under 5, there was also no evidence of multicollinearity in the three models.

We mapped the local R^2 for model 1 to depict and visualize the spatial heterogeneity over the study area. In Figure 4(a), the distribution of the local R^2 values – ranging from 0.501 to 0.728 – presents great spatial variation, implying that the explanatory ability of the GWR model varies with each ward. It is evident that the GWR was well fitted where the shades are darker (e.g., the southwestern portion of the province) and less so where the shades are lighter (e.g., the central parts of the province). Figure 4(b) shows that standardised residuals have no discernible pattern, thus implying that the residuals were randomly spread in the study area. Indeed, the global Moran's *I* of 0.006 for the standard residuals proved to be statistically insignificant. This further supports the fact that the GWR model was well specified, that is, that non-participation in WC meetings in the province was well estimated in this paper.

Table 2 also shows the values of the regression coefficients for Models 1, 2 and 3. For Model 1, we report one coefficient for the OLS model, whereas we report the minimum, median, and maximum for the GWR model. In the latter, the number of localized GWR coefficients (for each variable) is equal to the total number of wards – 529 wards in this paper. In Table 2, regression coefficients for the percentage of employed youth, average household income, the percentage of youth who have never interacted with government, the percentage of youth dissatisfied with the local councillor, and average educational level were positive and statistically significant (in Model 1). As such, as the values of these variables increase, so non-participation in the WC meetings increases. This implies that these variables performed as barriers to the participation of the youth in WC meetings.

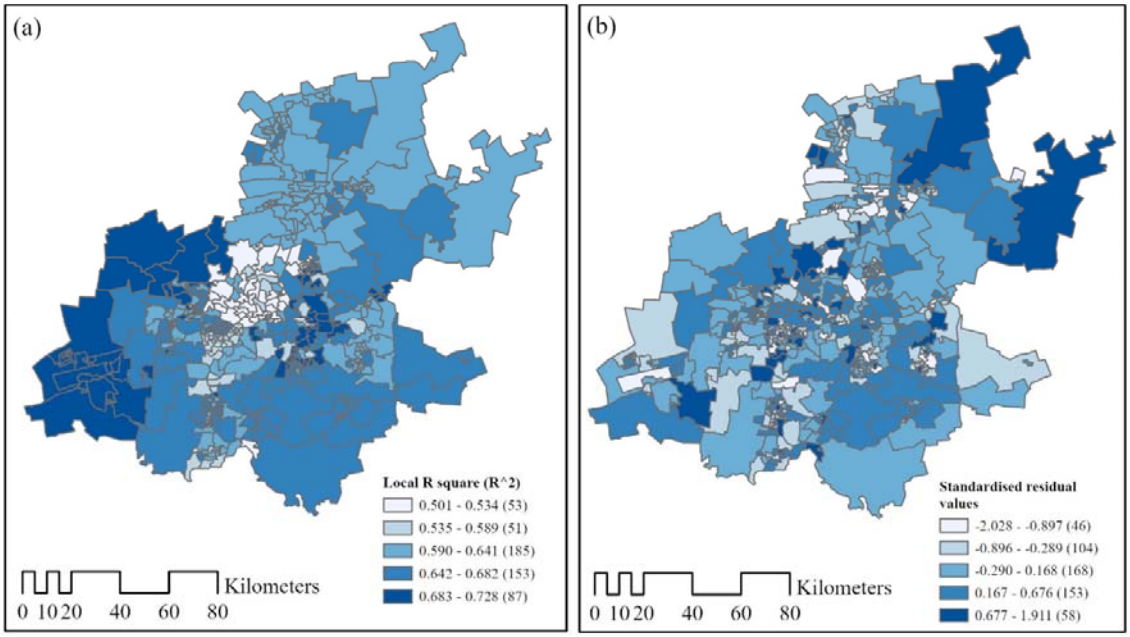

Figure 4. Local adjusted R^2 and standardised residuals in the GWR model (for Model 1).
Note: The values in the brackets in the legend show the number of wards per class.

While the above results were as hypothesised, Model 1's GWR results show heterogeneity in respect of the barriers to the participation of youth in WC meetings across the province. As an illustration, while the coefficient value for the percentage of employed youth in the OLS model was positive (= 0.086, $p<0.05$), the GWR model's coefficients ranged from -0.109 to 0.214 in relation to the same variable. Some of the GWR regression coefficients for the percentage employed youth were statistically significant at 5% (n = 250 wards), while the rest were insignificant (n = 279 wards) (see Figure 5(b) ahead).

"Localised" GWR regression coefficients for household income, the percentage of youth who have never interacted with government, and their average educational level were statistically significant ($p<0.05$) in 195, 264, 265, and 467 wards, respectively. Since all the coefficients related to the level of education were positive, these results imply that the level of education of the youth is a leading barrier in a larger number of wards in Gauteng province.

With negative and statistically significant coefficients across all 529 wards, results show that the higher the percentage of youth who are black, the higher the attendance at WC meetings. This is partly in contrast to Boysen's (2013) assertion that the majority of those who are less involved in community engagement are black. Statistically significant results also indicate in most of the wards (= 429) that the higher the percentage of youth who were born in Gauteng, the higher their attendance at WC meetings.

Table 2 further shows that Model 2 had an adjusted R^2 of 0.165 – with several of the predictor variables statistically significant. The results show that barriers to the participation of

the youth in CDF meetings include the percentage of youth who have not interacted with government, the percentage of youth dissatisfied with the local government, and the level of education of the youth. The results also show that the higher the household income, the higher the participation of the youth in CDF meetings. Similarly, the higher the percentage of black youth born in Gauteng, the greater the likelihood for them to participate in CDF meetings. Model 3 was poorly estimated (adjusted R^2 of 0.018) and with all the explanatory variables emerging as statistically insignificant, we could not interpret the results.

Table 2. Regression coefficients in local GWR and global models

	Model 1				**Model 2**	**Model 3**
	GWR			OLS	OLS	OLS
	Minimum	Median	Maximum			
Intercept	-0.178	0.009	0.171	0.272	0.824	1.008
Percentage employed	-0.109	0.122	0.214	0.086*	0.014	-0.107
Percentage female-headed households	-0.154	-0.066	0.075	-0.045	-0.051	-0.012
Average household income in Rands	-0.113	0.056	0.246	0.1**	-0.213**	-0.068
Percentage Black	-0.473	-0.329	-0.213	-0.354**	-0.195**	-0.114
Percentage Coloured	-0.044	-0.005	0.038	-0.012	-0.061	-0.023
Percentage Asian	-0.031	-0.004	0.06	0.001	-0.023	0.006
Percentage White	-0.009	0.009	0.088	0.019	0.029	0.017
Percentage born in Gauteng	-0.167	-0.13	-0.055	-0.101**	-0.139**	-0.089
Percentage disabled	-0.094	-0.052	0.014	-0.051	0.051	0.005
Percentage who think they cannot influence development	-0.115	0.001	0.05	-0.005	0.064	-0.023
Percentage who have never interacted with government	-0.07	0.126	0.395	0.121**	0.152**	0.121
Percentage dissatisfied with local government	0.085	0.125	0.223	0.136**	0.104*	0.081
Average (in years) educational level	0.062	0.328	0.437	0.296**	0.131*	-0.032
Percentage dissatisfied with local councillor	-0.147	-0.039	0.044	-0.049	0.052	-0.059
Diagnostics						
AICc	1115.095			1090.421	1424.392	1510.659
Koenker-Bassett statistic				55.059**	15.710	15.806
Moran's *I*	0.068[a]					
Adj. R^2	0.597			0.535	0.165	0.018

Note: ** and * indicate statistical significance at 1% and 5%, respectively; [a] indicates statistically insignificant Moran's *I.*

For lack of space, we mapped the coefficient and related t values for selected variables (only for Model 1). Figure 5 shows the spatial distribution and varying strengths of the respective regression coefficients, as well as their statistical significance. In Figures 5(a), 5(b), and 5(c), the legends are set to distinguish where negative and positive values lie on the map in each case. Similarly, statistical significance is also set at 5% – meaning that the t-values that are $|x| > 1.96$ (the shaded ones) show the statistical significance of the respective local coefficient values. This classification was important in that it enabled meaningful interpretation of the spatial distribution of the parameter estimates (Mennis, 2006).

Figure 5(a) shows that the percentage of employed youth has positive coefficient values in 425 wards and negative coefficient values in 114 wards. A total of 250 wards – comprising 191 wards with positive and 51 wards with negative coefficients – have statistically significant coefficients, that is, are $|x| > 1.96$ (Figure 5(b)). The positive coefficient values are higher in the dark-shaded wards, most of them in the southern part of the province. In these parts of the province, where the positive coefficient values are higher and statistically significant, the results suggest that the higher percentage of the employed youth portends a greater barrier to youth's participation in WC meetings. However, in the western parts of the province, for instance, where the coefficients are negative and statistically significant (part of the 51 stated above), the results suggest that the percentage of the unemployed youth is not a barrier to participation in WC meetings. These local GWR results show a much more nuanced picture of the role youth employment plays in participation or lack of participation in WC meetings. It differs markedly from lessons learnt from the global model, where conclusions are based on only one (statistically significant) positive coefficient.

The contribution of household income, while negligible – low coefficient values – has positive values in 412 wards and negative values in 117 wards. The higher, positive coefficients are found towards the south of the province. A total of 197 wards – comprising 180 wards with positive and 17 wards with negative coefficients – have statistically significant coefficients, that is, are $|x| > 1.96$ (Figure 5(d)). This means that in the 180 wards in the southern part of the province, the results imply that the higher the income the higher the non-participation in WC meetings. In contrast, in the 17 wards with significant negative coefficients, the level of income is not a barrier to the participation of the youth in WC meetings.

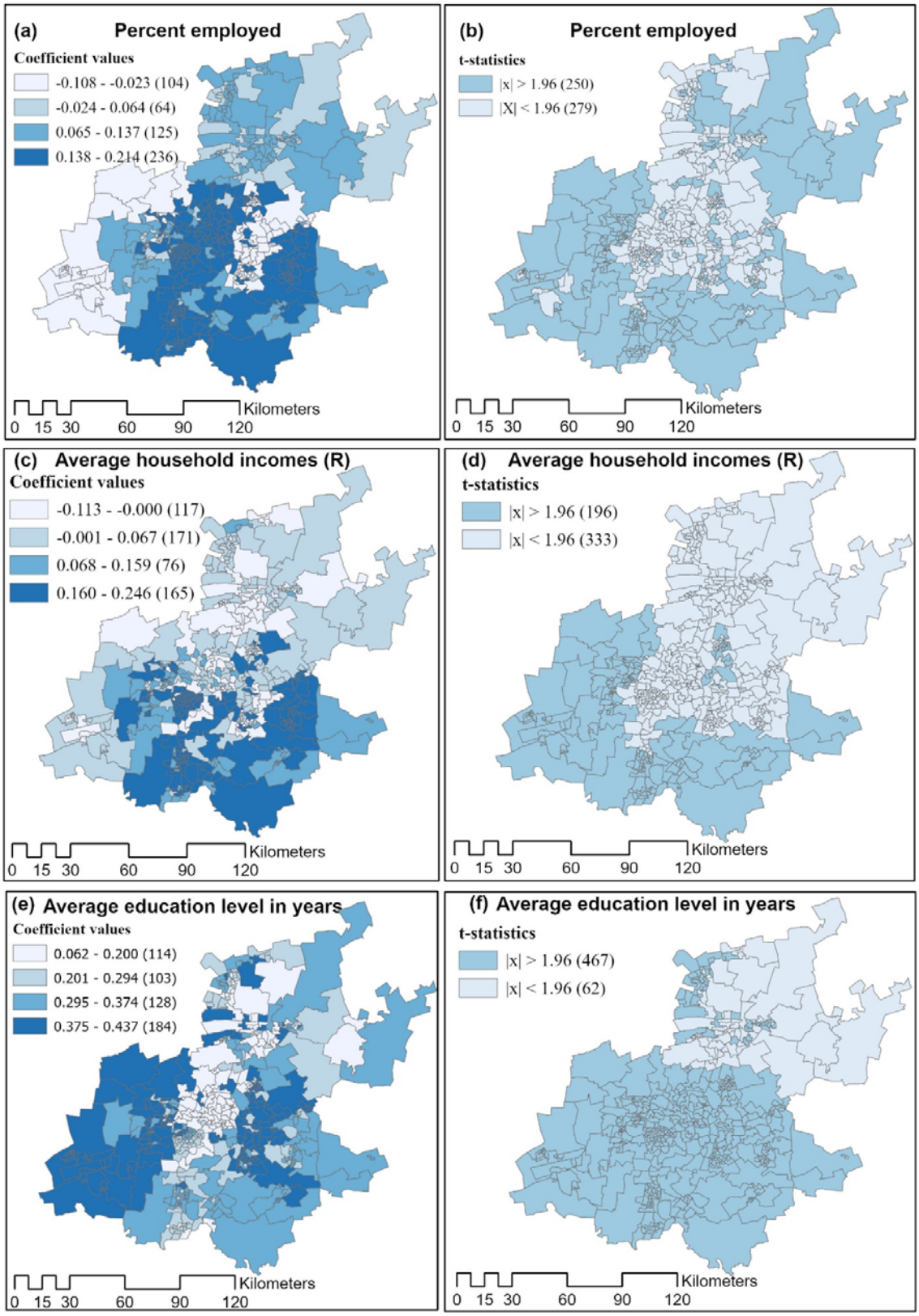

Figure 5. Local coefficient values and t-statistics of three selected predictors in the GWR, respectively (for Model 1). Note: The values in brackets in the legend show the number of wards per class.

The education variable has higher, positive coefficient values in the west of the province, followed by some central parts of the province (Figure 5(e)). Figure 5(f) shows a wider statistical significance in 467 wards in the southern metros (i.e., Johannesburg and Ekurhuleni) and the local municipalities of the province. A larger part of Tshwane stands out with statistically insignificant coefficient values. Overall, the GWR results described above show that the level of education is a barrier to participation in WC meetings in a larger number of wards (n = 467) in the province, compared to the percentage of employed youth and the level of education of the youth.

5. Conclusion

There is clear evidence that the youth population is growing across the globe. However, their role in local development planning is wanting. This hampers the credibility of local development planning and urban management processes and denies the benefits emanating from the demographic dividends. As cited in the literature section, events and processes that deter the youth from participation in their local development planning activities are varied. This paper used the available survey data and employed the GWR approach to investigate spatial variation in the non-attendance of the youth at local development planning meetings and the varying role of the associated predictor variables in Gauteng province.

The results were informative in several ways. The GWR approach allowed for the examination of spatially varying relationships, thus proving them to be important in providing evidence towards informing appropriate, targeted policy responses. According to ESRI (2021, para. D), these policy options focus on the following premises: (a) "Statistically significant global variables that exhibit little regional variation inform region-wide policy" – as illustrated by the statistical significance maps (e.g., Figures 5b, 5d, and 5f), where the levels of statistical significance (i.e., $|x| > 1.96$) are randomly distributed on the respective maps; (b) "Statistically significant global variables that exhibit strong regional variation inform local policy" – as illustrated by the statistical significance maps where one would find the levels of statistical significance (i.e., $|x| > 1.96$) are clustered in specific pockets of the larger region ; and (c) "Some variables may not be globally significant" – as illustrated by the statistical significance maps where no levels of statistical significance (i.e., $|x| < 1.96$) (ESRI 2021) could be found.

The results of the WC meetings were mainly aligned with the second of the ESRI's (2021) three policy options, that is, where "statistically significant global variables that exhibit strong regional variation inform local policy". In Figures 5(b), 5(d), and 5(f), the levels of statistical significance (i.e., $|x| > 1.96$) are clustered in specific pockets of the province. This means that the results of this paper should inform local policy, that is, policies should be tailored to the specific localities of each of the metros and local municipalities in Gauteng province.

Several predictors showed varying spatial relationships with non-attendance at WC meetings across the province (see Table 3). Mapping of the coefficient values (alongside their statistical significance) of the selected variables showed further evidence of the need for targeted, spatial policies. For instance, in terms of policy formulation, it is imperative that, as indicated by the level of statistical significance in Figure 5(b), the role of youth employment needs a localised approach in the peripheries of the province. Similarly, as indicated by the level of statistical significance in Figure 5(d), policies related to household income, need a localised policy approach in the western and southern areas of the province. In both the preceding cases of a localised approach to policy, the core of the province is excluded. However, regarding educational level, a regional approach that covers the cities of Johannesburg and Ekurhuleni metros and all local municipalities to the south of the province is appropriate. Also, only a few wards in the west of the Tshwane metro need a localised approach (see Figure 5(f)).

Results for non-participation in CDF meetings had no significant localised GWR results since the data emerged as stationary – meaning an OLS model was appropriate. This is in tandem with ESRI's (2021) first of the three policy options, that is, where "statistically significant global variables that exhibit little regional variation inform region-wide policy". The results of the IDP meetings were not robust, and thus could not be interpreted.

One key implication of the above results is of concern and merits attention. This is because with the likelihood that the employed persons are better educated, earn larger incomes, are likely to be more economically stable, and feel less reliant on the government, for example, there is a greater chance that all these factors can cause a cumulative and long-term effect that may hinder further participation of the youth in local development planning processes at the present time and as they mature into adulthood.

The main contribution of this paper has been to show evidence of spatial heterogeneity in the effects of several predictor variables on the lack of participation of the youth local development planning in the province. This paper was not intended to come up with a specific formulation of policies needed to encourage greater participation by the youth in local development processes since that was beyond its scope. However, the paper notes that there is a need to educate and encourage the youth to participate in local development planning processes since this is necessary for the maintenance of a healthy democracy.

In addition, this paper suggests the need to interrogate whether the youth's lack of interest is associated with the timing of the meetings and their omission to adequately use the various media forms, including social media, to publicise and conduct such WC meetings, etc. The use of online platforms enabled by the social and other media should gain resonance now and in the post-Covid era. Other forms of assistance may include road shows aimed at familiarising the youth (and others) as to which officials, including political leaders and civil servants, are in positions of governance, and where; at elaborating on government processes, roles, and structures; and at advertising the need to

bring all voices to the negotiating table. In this way, solutions hinged on, amongst others, broad consensus should be facilitated (Khuzwayo, 2011). In any event, in implementing any of the policies, it is necessary for the local development processes to validate the agreed prescriptive steps in a manner that would guarantee the much needed success in the short through to the long term.

6. References

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