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Major Revisions requested ASAP-D-19-00177

ASAP Editorial Office <em@editorialmanager.com>

Mon, Apr 6, 2020 at 8:22 AM

Reply-To: ASAP Editorial Office <xavier.castanos@springernature.com>

To: "Paez, Antonio" <paezha@mcmaster.ca>

Dear Prof. Páez,

We have received the reports from our advisors on your manuscript, "Do moral communities have a spatial dimension? A spatial exploratory analysis of places of worship and violent crime in the city of Recife, Brazil.", which you submitted to Applied Spatial Analysis and Policy.

Based on the advice received, I feel that your manuscript could be reconsidered for publication should you be prepared to incorporate major revisions. When preparing your revised manuscript, you are asked to carefully consider the reviewer comments which are attached, and submit a list of responses to the comments.

You are kindly requested to also check the website for possible reviewer attachment(s).

In order to submit your revised manuscript, please access the following by logging in using these credentials:

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Please make sure to submit your editable source files (i. e. Word, TeX).

We look forward to receiving your revised manuscript before 08 Jun 2020.

With kind regards,
Calum Carson
Managing Editor

COMMENTS FOR THE AUTHOR:

Reviewer #1: This article uses spatial point pattern methods to explore the distribution of violent crime as it relates to the location of three types of churches and other land use types in Recife, Brazil. The authors suggest that the intensity of violent crimes is higher near to evangelical churches than other types of churches.

1. The article as currently written is lacking a thorough and logical argument as to why the location of churches can be hypothesized to influence violent crime at the point-level (i.e., where distance is the measure of interest rather than location within an area). The current framing of the article also does not convincingly situate 'moral communities' within a geographical framework and does not make clear the hypothesized mechanisms that link the presence/absence of a church at a specific location with criminal behavior and, more specifically, the presence/absence of churches of specific religions with violent crimes. The authors should make sure not to conflate the processes linking crime with population characteristics (percent of individuals who are religious in an area), with religion more broadly (hellfire hypothesis), and with the the location of a church in geographic space. This theoretical work is necessary to justify why this study is relevant and make clear how it contributes to the existing literature.

2. The introduction of the paper does a really good job setting out the importance of reducing violent crime for achieving policy goals, but it is not clear how this research will contribute to developing, implementing, or evaluating policy. For this journal, I think it is necessary for the research to contribute to policy; so, how can police, religious officials, and other policymakers use the results of this study?

3. I currently find the logic of the analysis and the results to be confusing and I think that adding the results of more exploratory work before showing results of very specific analyses (i.e., those with SES quintiles and different church types) would help to provide a convincing argument that the results of this research are solid. For example, the authors may first examine the intensity of crime as it relates to all churches (aggregated), then to adjust for ses with all churches, and then to adjust for land use. Then, after presenting the results of the initial analysis for the aggregated churches, the results of the specific church types can be presented.

4. The authors should add a review of social disorganization theory and informal social control as these concepts are mentioned a number of times but not discussed in any detail. The similarities and differences between these concepts and the geographically-situated moral community concept should also be discussed.

5. The authors should justify their choice of method over other approaches, such as regression models, which provide a framework for quantifying the relationship between crime and churches after accounting for SES factors, land use types, and population at risk. There are a number of regression models that allow coefficients to vary over space, which would quantify how the impact of churches on crime changes by distance (see: generalized additive models, spatially-varying coefficients, geographically weighted regression). Without this type of analysis, or at least a more thorough discussion of why this point pattern method was chosen, I am not convinced that crime is, in fact, associated with evangelical churches at close distances and that this isn't due to other factors, like evangelical churches being located in high population density areas (and so crime is due to higher population density, not the presence of a church), for example.

6. Please define the term 'neutral morality profile' and how it relates to the spatial distribution of crime around land uses. Please also clarify what 'having a spatial distribution commensurate with places of worship' means and provide evidence to support this claim.

7. Did this study investigate the location of crime events, offender locations, or victim locations? I assume crime events, but it would be good to clarify nonetheless.

8. For the intensity measures, what is the unit area for the results? Would it be possible to provide an intensity unit such as per mile² or per km², for example? I think that this would improve the interpretation of the results and Figures 6 and 7 in particular.

9. When discussing the quantitative results throughout Sections 5.3 and 5.4, please add uncertainty intervals so that readers can interpret the degree to which two quantities are, in fact, different? For example, p.16-line 49: "reaching a peak of 2.4916×10^{-5} (95% CI: 2.1×10^{-5} , 3.2×10^{-5})."

10. Please provide some additional text describing the equations in Section 3.2. It is not immediately clear to me how to interpret equations and how they are reflected in the results. For example, what is $B(s)$, how is it calculated, and what does it mean for understanding the distribution of crime in relation to churches?

11. For readers (like me) who are unfamiliar with the geography of Recife, Brazil, it would be helpful if a detailed map was included in the paper that shows where the downtown is, major roads, different neighborhoods, etc. This could be included in the background of Figure 1 or in an Appendix. It would also be helpful if the authors provided some description of the patterns observed in Figure 1 and Figure 2 identifying where violent crimes (or churches, supermarkets, etc.) were clustered and where they weren't clustered.

12. How is the SES data, which I assume is distributed at the area-level, translated to points so it can be used in the point pattern analysis? Please describe how this was done and the limitations of doing so, if any. Related, why did the authors choose to break up SES into quintiles rather than keep it as a continuous measure or break up into other classifications?

13. What are the counts of the different types of churches, ice cream shops, pharmacies, and supermarkets? I am wondering if the frequency of each of these 'events' would influence the chi-square statistics and associated p-values shown in Table 3. Is this possible?

Reviewer 2:

This was an interesting paper to review, challenging even.

We'll start with a couple of minor issues

– in the quadrat analysis are the results conditioned on the quadrat size. If I understand correctly this might not be an issue with conditional quadrat counts, through the use of a covariate. It does remind me of Openshaw early work on optimal zoning systems. Perhaps a simple example to guide the reader might help.

- the symbolism in Figure 1, 2, and 3 are rather large. I'm at a loss to interpret Figure 3, because as the image is built up (I have a rather slow graphics card) I see symbols overlapping.

There's a cultural issue which I find challenging. I think I know what Catholic and Evangelical churches may be, but this is first encounter with Spiritism. I assume that the first two are differentiated along some transubstantiation/

consubstantiation divide, with the Catholics being in the former group. As for Spiritist churches I'm at a loss. Do these follow the teaching of Allan Kardec; I presume it's related to the Spiritualist churches found in the Anglophone countries, which go back to Swedenborg and Mesmer, and which seem to be originally motivated by trying to make contact with the dead. If so, then it's very much a minority sect. Perhaps the authors might like to expand on the details further for those readers who are not familiar with religious practices, and how they are undertaken in Brazil. Would I recognise the same in Cape Town, to take a city at random. Would this be a typical Spiritist church: <https://goo.gl/maps/kwWe2B7didMk8vfDA> Some description of the geography of Recife would also help. Where are residential areas, where are industrial zones, is there a university, and so on.

What's the reason for the choice of controls – what if we take another three, such as take-away food outlets, garden centres, and clothing/footwear shops? Would we get similar of different results? You could use simulation to build a distribution of randomly chosen groups of different land uses. I'm not proposing that this should happen, but it's a possibility.

I am reminded of Openshaw's early work on cluster detection – work was based around trying to link clusters of leukaemia to electricity substations, and overhead transmission lines. Alan Craft was rumoured to have asked something along the lines of “how do we know it's substations, or fish chip shops. What if it's telephone booths?” Openshaw turned his approach on its head to ask where the clusters were occurring. This lead him to a nuclear waste reprocessing plant, and an urban domestic waste incineration plant. Does the possibility of turning the question to look at this from another point of view?

I'm left wondering whether this paper tells me something about spatial relationships in Recife. The author(s) assert that the research is exploratory. But to what extent might they apply elsewhere? Would these relationships translate to Vienna, for example?

I think that ASAP readers might be find this paper rarified. They certainly need help with some of the cultural issues.

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