Review of: "Achieving Sustainability in Smart Cities Mission in India through Universities' Innovation in India"

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Dear Dr. Singh,

I recently had the opportunity to review your research paper on Smart Cities and their role in achieving Sustainable Development Goals. I appreciate you on your thoughtful analysis and the considerable effort you have put into this work.

However, to help enhance the overall impact and readability of your paper, I have a few suggestions I believe could improve this article further. Here are the key points:

1. **Background:**

   Clarify Terminology: There should be a better explanation of certain key terms or phrases. For instance, the "process of Industrial Revolution 4.0" might not be immediately clear to all readers. Providing a succinct definition or explanation of such phrases would ensure clarity.

   Narrow Down Focus: The scope of the paper seems broad as it tries to cover a wide range of topics from Smart Cities, Sustainable Development Goals, the impact of COVID-19, and the role of engineering colleges in developing sustainable technology. Narrowing down the focus or structuring the content in a more clear and interconnected manner could enhance the readability and impact of the research.

   Enhance the Flow of Information: The document could be improved with better transitions between thoughts and ideas. As it stands, there is a quick jump from one topic to another without much of a transition. This could confuse readers and make it hard for them to follow the thought process.

   State Clear Objectives Early On: The objectives of the paper should be clearly stated in the beginning to guide the reader. In the current format, the reader has to go through several sections before reaching the objectives. By stating the objectives and methodology early on, readers would know what to expect from the paper and it would make it easier to follow the progression of ideas.

2. **Smart City Mission in India**

   Contextualize the Four Pillars: You mention four pillars of the urban ecosystem (institutional, physical, social, and economic). It would be helpful to provide more context or examples of what improvements would look like in the case of each pillar and how these improvements would be achieved through the use of modern technologies.

   Explicit Mention of Sustainable Goals: Since the overall paper aims at addressing the sustainable development goals in the context of smart cities, it would be beneficial to explicitly tie these points to the relevant SDGs. For instance, addressing issues such as vehicular pollution and aging infrastructure can be tied to SDG 11 (Sustainable

Cities and Communities). Explicitly mentioning this would help the reader see the connection between your discussion and the broader objectives of the paper.

Evidence: To support the statement "cities comprise a higher component of young population", it would be beneficial to include statistical data or specific studies. This strengthens your argument and makes it more compelling.

3. **Review of Literature**

    Synthesis of Literature: While numerous studies are mentioned, there's a lack of synthesis and direct comparison between these studies. Where do these authors agree or disagree? How do their findings complement each other or provide contrasting viewpoints?

    3.1 Smart City- definition, social, economic and environment

    Critical Evaluation: While presenting the views of various researchers, critical evaluation of their findings seems to be missing. As a literature review should not only present but also evaluate the studies, it would be good to add some critique or evaluation of the mentioned studies.

    Relevance of Non-Indian Literature: You mention quite a bit of non-Indian literature, such as studies conducted in Stockholm, Barcelona, New York, Vienna, and Toronto. However, the relevance of these studies to the Indian context is not made clear. How do the findings of these studies apply to India? Or, what lessons can India learn from these studies?

    Application of Indices and Scoring Systems: The scoring system from Easy Park and the composite index from Panda et. al. are introduced without explanation of how they are used or applied in the study. If these systems are going to be used later in the paper, this should be mentioned. If not, their relevance to the paper should be clarified.

    3.2 Sustainability and Sustainable Development Goals (SDGs)

    Explicit Connections between SDGs and Smart Cities: The connection between Sustainable Development Goals (SDGs) and smart cities is only implied, but not explicitly stated. Explaining how smart city initiatives might help in achieving SDGs would make this connection clearer.

    Clarity on Reference to External Study: The reference to the study by UNU-EGOV is somewhat vague. What were the key findings of this study? How does it support or contribute to the argument being made in this paper? More specifics are needed to fully understand its relevance.

    Application of Sustainability in India: While it's mentioned that sustainability is a significant factor in evaluating projects in India, there are no specific examples given. Including a few examples of how sustainability is being implemented or considered in Indian urban development projects, especially in the context of smart cities, would enhance the real-world relevance of this section.

    3.3. COVID-19 and Emerging Issues in City Planning

    Mention of Specific Smart City Applications: The paper would benefit from explicit examples of how Smart City technologies and strategies were or could be used in response to COVID-19. Examples could include digital contact

tracing, online education, remote work, etc.

Depth on Impact of COVID-19 on City Planning: While the paper briefly touches on the economic impact of the pandemic, there is limited discussion on how COVID-19 may shape future city planning. Some reflection on potential changes, such as increased emphasis on public health infrastructure or remote working capabilities, would be beneficial.

3.4 University and their Role in Maintaining Smart City

Structure and Flow: The text is quite dense and hard to follow. Breaking it up into subsections, each focusing on a specific country or aspect of the relationship between universities and smart cities, would enhance readability.

Discuss Challenges: The paper concludes by noting that Smart City missions are not seen as innovation challenges by engineering institutions in Delhi, which seems to be a problem. This point could be developed further to discuss the challenges universities face in engaging with Smart City initiatives and potential solutions to these challenges.

Explicit Thesis Statement: The paper would benefit from a clearer articulation of its main argument or thesis. What specifically does the paper aim to demonstrate about the role of universities in maintaining a smart city? Having a more explicit thesis statement would help guide the reader through the text.

More Thorough Analysis: While the text references many examples of how universities contribute to smart cities, there isn't a lot of analysis or synthesis of these examples. Providing more commentary and drawing connections between these examples would give a better understanding of the role universities play in smart city development.

3.5 Research Gap

Language Clarity: The language and phrasing used throughout this section could benefit from being made more academic and precise. For instance, terms like "hotbed of innovation" and "city smartly" could be replaced or expanded upon to convey a more rigorous sense of the concepts they represent.

Specificity in Claims: The claim that "Europe have shown the way by the concept of 'living lab'" needs more specific examples and citations to back it up. Where in Europe, which universities, and how did they implement this concept?

Establishing the Research Gap: The text does not clearly articulate the research gap. While it does mention that there hasn't been much study done on the collaboration between engineering colleges and smart city innovation, it doesn't convincingly demonstrate why this is a significant gap in the research. More justification is needed as to why this area of study is important.

Overgeneralization: The assertion "any city can be transformed to a smart city" is a broad generalization that lacks supporting evidence and context. The author should elaborate on what conditions are needed for a city to be transformed into a smart city and provide some examples or case studies.

Grammar and Punctuation: There are several grammatical errors in the text that need to be corrected, such as the use of "Europe have shown" instead of "Europe has shown" and the missing of a comma before "that keeping university". Also, the section would benefit from better punctuation to improve its readability. The numbering of this section is also incorrect. It should be 3.5 and not 3.4.

4. **Objective of Study and Methodology**

   Sentence Structure and Clarity: The phrasing of the research objectives could be improved for better clarity and conciseness. For example, "Are engineering colleges innovating for smart city mission of India?" could be reframed to "Investigate the role of engineering colleges in supporting India's smart city mission."

   Methodology Justification: There needs to be a more detailed explanation or justification for the choice of the mixed method and why it's suitable for this research. Furthermore, the reason for choosing Spearman's Rank correlation should be explained. The reader should understand why this specific statistical method is used over other potential methods.

   Data Use and Justification: The use of data from 2013-14 requires more justification. Why was this specific year chosen, especially given that it's quite dated for a paper seemingly written in a later year?

   Structure and Organization: The subsections and their contents are not clearly divided. For instance, the explanation of the data sources (SDG index, State Innovation Index, etc.) and the calculation method (Spearman's Rank correlation) could be organized into separate subsections to improve readability.

   Citation and References: The usage of Singh's (2019) findings for both the third and fourth objectives needs a clearer rationale.

5. **Analysis**

   Introduction to the Analysis: There should be a more robust introduction to the analysis that outlines what exactly is going to be analyzed, why it's important, and how it relates to the research objectives and research questions posed in the paper.

   5.1 (Where is the name of this sub-section?)

   Clarity and Justification of Findings: The authors need to explain how they have arrived at certain conclusions. For example, when they state, "It may be inferred that the states which are higher ranked on SDG 11 are not economically higher ranked also", it is not clear how this conclusion was drawn from the correlation result.

   Statistical Interpretation: The authors need to be clearer in their interpretation of the Spearman's rank correlation result. They mentioned that the correlation was "very low (0.144499)" without explaining what this result means in the context of their research.

   Language and Conceptual Clarity: The sentence "However, efforts need to be made for urban area to be economically sustainable too and eventually, innovation comes to focus." is confusing and vague. The authors need to ensure they clearly express their ideas and connect them logically. The final sentence "There is need to emphasise sustainable innovation demarked it from just innovation" is unclear. They need to explain what they mean by "sustainable innovation" and how it differs from "just innovation".

   5.2 (Where is the differentiation of this subsection? It appears as if it is in continuation with the previous subsection)

   Clarification of Categories: The categories like 'Achiever', 'Front Runner', 'Performer', and 'Aspirant' need to be better

defined or explained. How these categories were determined and their importance in the context of this study should be highlighted.

Explanation of the Correlation Coefficient: The authors should provide more insight into the interpretation of the correlation coefficient. Just stating the numerical value doesn't give enough context to the reader. The implications of a low correlation should be explained in more detail, especially in relation to the research question.

Language Clarity: The phrase "the innovation will not be automatically sustainable but need to be planned to be so" is a bit vague. It would be helpful to the reader if the authors could further elaborate on what they mean by "innovation will not be automatically sustainable".

General Grammar and Syntax: The paper could benefit from proofreading and editing. Some sentences are awkwardly structured and contain typos, for example, "Karnatka" should be "Karnataka", which disrupt the reading flow and may confuse the reader. Ensuring proper grammar and syntax will make the paper more professional and easy to understand.

5.3. Role of Engineering Colleges in Innovating for Smart Cities in India

Contextualization: The introduction to this section should contextualize the information to be presented more clearly. What does India's rank in the Global Innovation Index mean for the study's objectives? How does the number of Science and Engineering graduates impact smart city innovation?

5.3.1 National programme of Smart City

Detailing the Impact: The initiatives mentioned are stated without fully articulating their impact on the innovation in smart cities. The authors should provide more analysis on how these programs have influenced the innovation for smart cities in India. **Assessment of the Programs:** There should be an evaluation of the efficacy of these programmes in achieving their goals. Have they been successful? What have been their challenges and how could they be improved?

Citations and Formatting: Citations need to be consistently formatted. The mention of FICCI's Smart Cities Summit, for instance, is not cited consistently with the rest of the paper's references.

5.3.2 International Programmes of Smart City

Relevance and Integration: The author should explain why these international programs are relevant to the context of India and the smart cities movement there. Furthermore, the ways in which these programs could potentially be integrated within the Indian context or how they have influenced existing initiatives should be discussed.

Explanation and Analysis: The text presents information without much explanation or analysis. The impact of these programs should be discussed and analyzed to show their effectiveness or lack thereof. It's crucial to discuss how these international programs have influenced smart city developments, especially in relation to the Indian context.

Comparison and Contrast: The paper could benefit from a comparison and contrast between the national and international programs. What are the key differences in approach, and are there any learnings that could be applied across contexts? The author should consider addressing these questions to provide a more comprehensive view.

5.3.3 University level Programmes on Smart City

Explicit Connection: This section discusses the involvement (or lack thereof) of engineering colleges in the smart city mission of India, but it doesn't provide an explicit connection to the overall research objectives. You should better explain how this information relates to the larger scope of the study.

Deeper Analysis Required: Your examination of the involvement of engineering colleges seems to focus primarily on a single study by Singh (2019) about Delhi. It would be valuable to include more research or data to support your points, or a deeper analysis of the results from Singh's study and how they connect to the larger context.

Broaden the Scope: The focus on Delhi's colleges might not provide a comprehensive picture of the situation across India. If possible, consider incorporating data or studies about the involvement of engineering colleges in other cities or states in India.

More Explanation Needed: When mentioning that 'Smart City Mission' in India is a government program and technological programs are passed on to the Indian Institute of Technology (IIT) Delhi, it is important to explain why this is the case, how it impacts the involvement of other colleges, and whether there are any strategies to involve other institutions.

Recommendations for Improvement: In the final sentences, you've indicated a shortfall in the system, with many colleges not involved and a bias towards IIT Delhi. After pointing out these issues, it would be beneficial to the reader to provide recommendations on how to address these problems, such as policy changes or new collaborative models.

5.3.4 and 5.3.5

Clarity: The structure of the sections seems unclear, making it difficult to follow the content. A suggestion would be to revise for better flow and coherence. For instance, the transition from discussing "training from engineering colleges" to "students' perspectives on smart city" could be better bridged.

Detail on Methodology: You mention an assignment given to students about smart cities, but you don't provide much detail on the methodology of this exercise. Including more information about how the assignments were structured, the specific questions asked, and the evaluation criteria used could strengthen this section.

Interpretation of Findings: When you mention the lack of discussion about "female friendly technology" and technology for economically or socially marginalized people, you could elaborate more on why this is an issue and what it suggests about the students' perspectives on smart cities.

Implications and Recommendations: After discussing the assignments, there should be a deeper analysis of the implications of these findings and some recommendations. This could include suggestions for curriculum adjustments, new pedagogical approaches, or the need for further research on specific topics.

6. ***Conclusion and Recommendation***

Elaboration on the Conclusion: The conclusion could benefit from a deeper analysis of the findings of the paper. The discussion on managerial and theoretical implications of the findings of this study must be included. This would also offer readers a better understanding of the implications of the study.

Lack of Specific Recommendations: The recommendations made in the paper are quite broad and could be made more specific. For example, you suggest that engineering colleges need to be more involved in the Smart City Mission, but you do not explain how they should do so. Concrete steps or strategies could improve the impact of the recommendation.

Structure of the Conclusion: The paper concludes with a statement about its limitations, which is unconventional. It would be more effective to include this discussion earlier in the conclusion and then end on a note that summarizes the paper's key points and recommendations.

Inclusion of Relevant Stakeholders: The paper suggests that further research should examine the smart city from the perspective of marginalized groups, but it does not discuss the involvement of these groups in current efforts or policies. Including a recommendation about engaging these stakeholders could strengthen the paper's conclusion.

I trust these points will assist in further refining and strengthening your work. I understand that feedback is part of an iterative process and I appreciate your commitment to enhancing the overall quality of your research. I look forward to seeing the finalized version of your research paper.

Thank you again for the opportunity to review your insightful work.

Best Regards.