NSTU

Подготовка материалов статей для рейтинговых журналов

March 28, 2018, 10:00 – 11:00pm

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Content

- Publication types
- Publication structure
- Main Elements
  - Title
  - Abstract
  - Data and Methods
  - Results
  - Discussion
  - Miscellaneous
- Recommendations
- Q&A

Visualization and effective communication

Main Principles

Rule 1: A logical path, context, underlying concepts, or results should rest on solid evidence and facts.

Rule 2: Explanations of methods, results and concepts should consider audience level and interests.

Rule 3: Delivery should be user-friendly, force to note the unexpected, motivate questions, clarify statements.

Publication types

- **Original research**
- Reviews
- Systematic review
- Meta-analysis
- Case study
- Opinion
- Perspective
- Commentary
- Letter to the Editors
- Book chapter

Different weights in different disciplines

Publication: structure

Consider time commitment to each part!

- **Abstract.** Offer brief structured summary
- **Introduction.** Set the stage, identify significance, novelty, originality; define long-term goals and specific objectives.
- **Data and Methods.** Describe data collected and utilized in the study; describe methodology and specific techniques of data collection and analysis
- **Results.** Provide description of findings
- **Discussion and Conclusions.** Justify methodology for data collection and analysis; strengths and limitations of the study; the context and interpretation of findings.
- **Cited Literature**
- **Acknowledgements**
- **Supplementary Material**

Publication: main elements

- **Title -** full and running titles
- **Authorship -** roles and affiliation
- **Summaries -** highlights, abstract and conclusions
- **Data -** primary and secondary data sources, ownership and agreements
- **Methods -** ownership and credits
- **Acknowledgments -** funding, ownership, credits, contributions

Publication: main elements

- **Title -** full and running titles
- **Summaries -** highlights, abstract and conclusions
- **Introduction -** set the objectives
- **Authorship -** order and roles
- **Affiliations**

Science of the Total Environment 559 (2016) 291–301

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Science of the Total Environment

journal homepage: www.elsevier.com/locate/scitotenv

Piped water consumption in Ghana: A case study of temporal and spatial patterns of clean water demand relative to alternative water sources in rural small towns

Alexandra V. Kulinkina [a,*], Karen C. Kosinski [b], Alexander Liss [a], Michael N. Adjei [c], Gilbert A. Ayamgah [d], Patrick Webb [e], David M. Gute [a], Jeanine D. Plummer [f], Elena N. Naumova [a,e,*]

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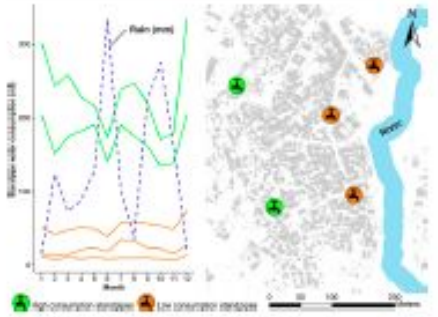
HIGHLIGHTS

- Low water demand from piped water systems results in a low revenue stream.
- Low revenue stream presents a sustainability challenge to rural water systems.
- Water consumption from piped water systems varies temporally and spatially.
- Poor aesthetic water quality as compared to alternative sources reduces piped water use.
- Increasing improved water demand is a health and sustainability priority.

GRAPHICAL ABSTRACT



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ABSTRACT

Continuous access to adequate quantities of safe water is essential for human health and socioeconomic development. Piped water systems (PWSs) are an increasingly common type of water supply in rural Africa as small towns. We assessed temporal and spatial patterns in water consumption from public standpipes of four PWSs in Ghana in order to assess clean water demand relative to other available water sources. Low water consumption was evident in all study towns, which manifested temporally and spatially. Temporal variability in water consumption that is negatively correlated with rainfall is an indicator of rainwater preference when it is available. Furthermore, our findings show that standpipes in close proximity to alternative water sources such as streams and hand-dug wells suffer further reductions in water consumption. Qualitative data suggest that consumer demand in the study towns appears to be driven more by water quantity, accessibility, and perceived aesthetic water quality, as compared to microbiological water quality or price. In settings with chronic under-utilization

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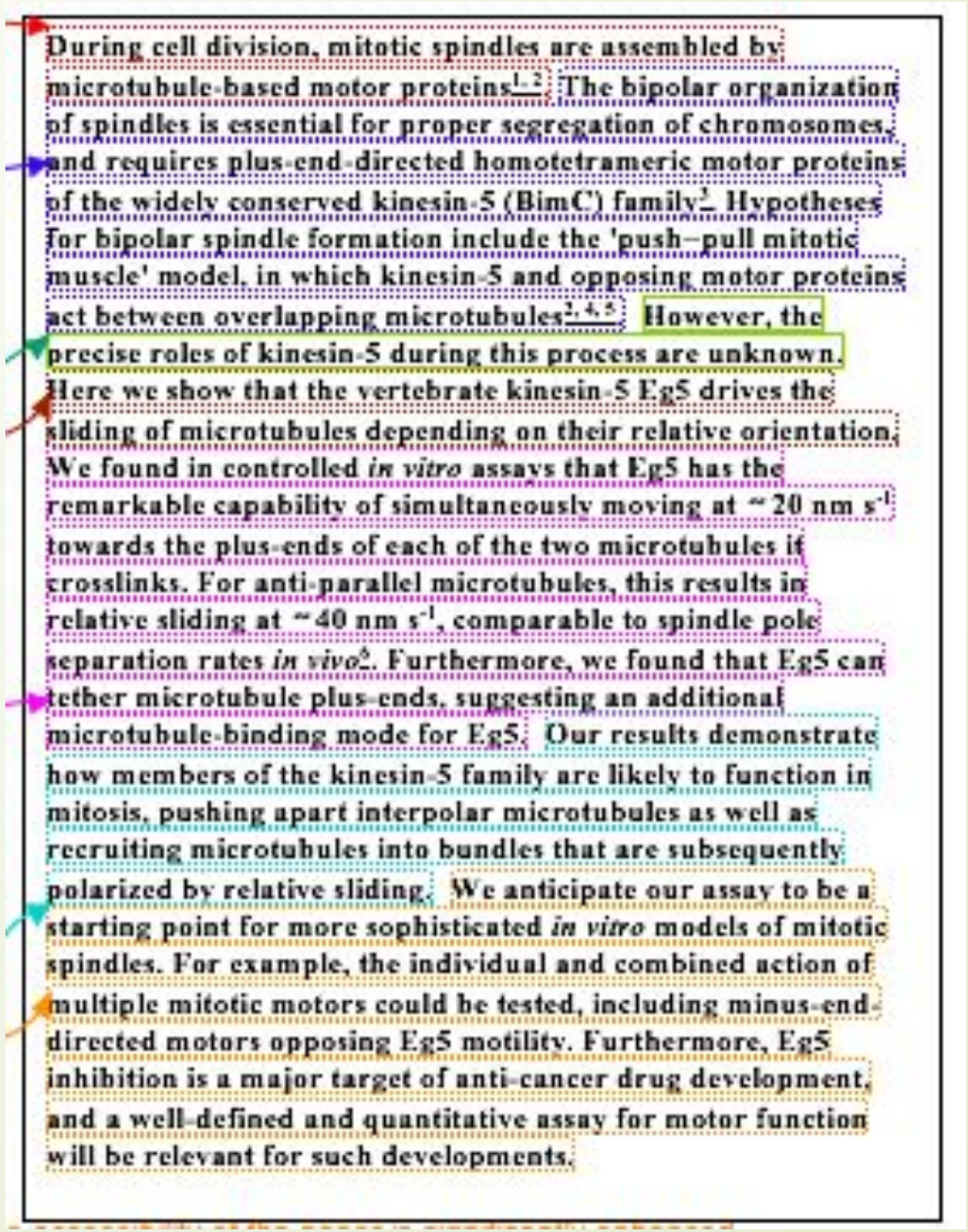
Abstract Outline



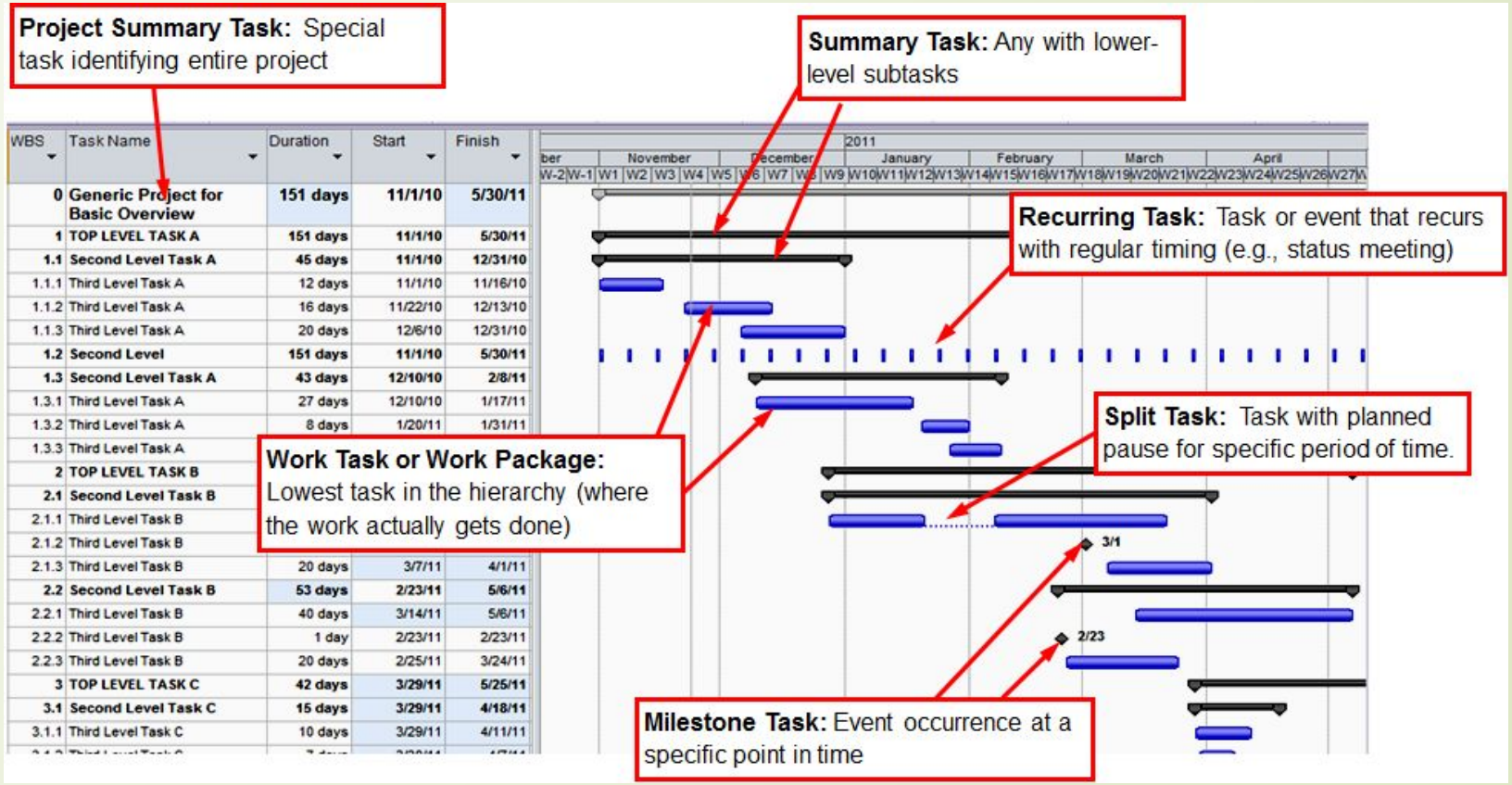
During cell division, mitotic spindles are assembled by microtubule-based motor proteins[1,2]. The bipolar organization of spindles is essential for proper segregation of chromosomes, and requires plus-end-directed homotetrameric motor proteins of the widely conserved kinesin-5 (BimC) family[3]. Hypotheses for bipolar spindle formation include the 'push–pull mitotic muscle' model, in which kinesin-5 and opposing motor proteins act between overlapping microtubules[2,4,5]. However, the precise roles of kinesin-5 during this process are unknown. Here we show that the vertebrate kinesin-5 Eg5 drives the sliding of microtubules depending on their relative orientation. We found in controlled *in vitro* assays that Eg5 has the remarkable capability of simultaneously moving at ~20 nm s^{-1} towards the plus-ends of each of the two microtubules it crosslinks. For anti-parallel microtubules, this results in relative sliding at ~40 nm s^{-1}, comparable to spindle pole separation rates *in vivo*[6]. Furthermore, we found that Eg5 can tether microtubule plus-ends, suggesting an additional microtubule-binding mode for Eg5. Our results demonstrate how members of the kinesin-5 family are likely to function in mitosis, pushing apart interpolar microtubules as well as recruiting microtubules into bundles that are subsequently polarized by relative sliding. We anticipate our assay to be a starting point for more sophisticated *in vitro* models of mitotic spindles. For example, the individual and combined action of multiple mitotic motors could be tested, including minus-end-directed motors opposing Eg5 motility. Furthermore, Eg5 inhibition is a major target of anti-cancer drug development, and a well-defined and quantitative assay for motor function will be relevant for such developments.

- Fields
- Disciplines
- Problem
- Study design
- Data source
- Analysis
- Results
- Conclusion

Publication: main elements

- **Data -** primary and secondary data sources
- **Methods -** order, logic, sequence, notation

Gantt chart helps in foreseeing the possible time a project task can take and when tasks can possibly be finished.



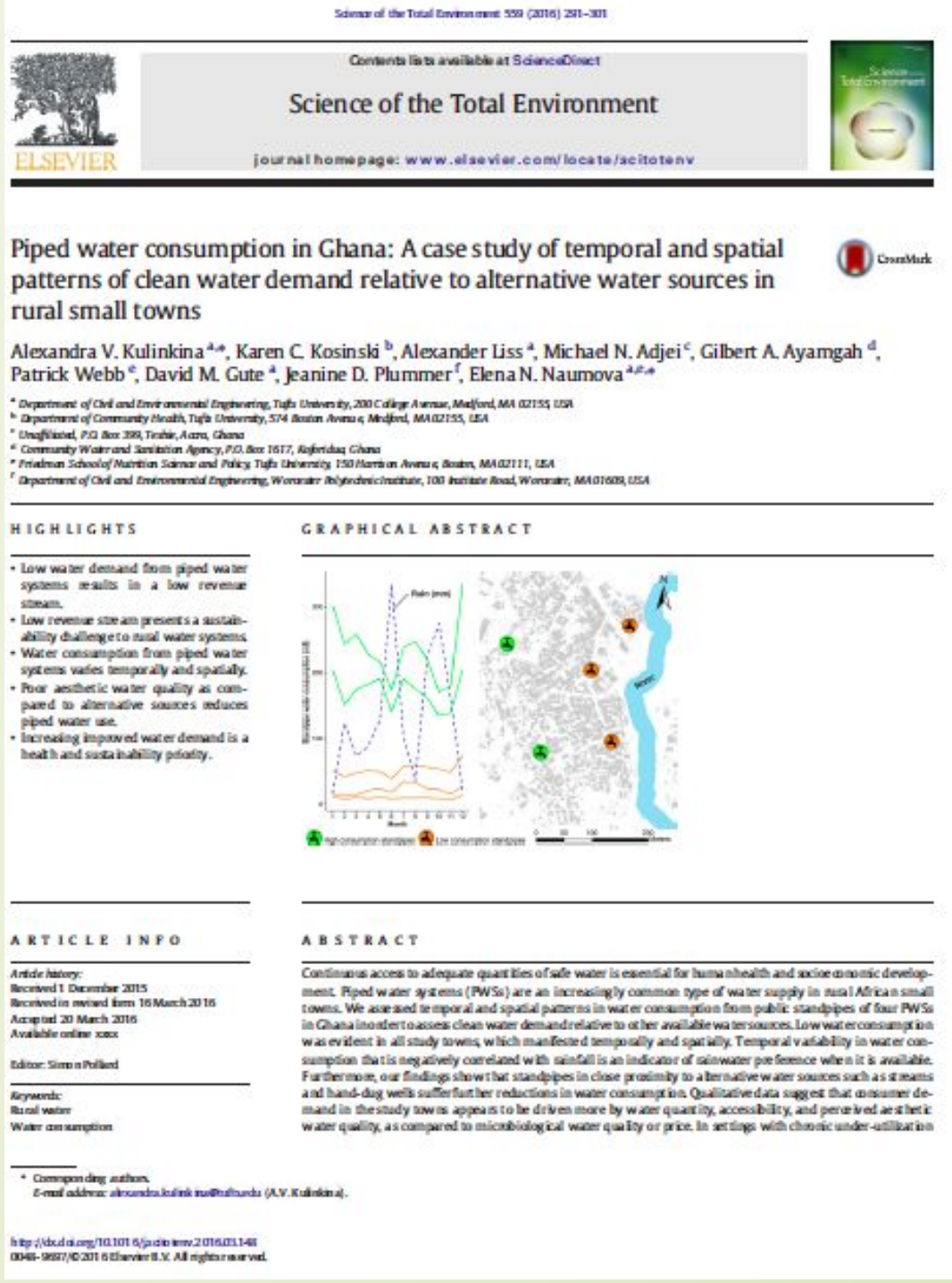
https://www.e-education.psu.edu/geog871/l5_p5.html

Publication: main elements

- **Results -** core materials
- **Supplementary Material**
- **Discussion -** order, logic, sequence study limitations and strength
- **Conclusion -** funding, ownership, credits, contributions
- **Bibliography -** limits, rationale, self-citation
- **Acknowledgments -** funding, ownership, credits, contributions

Use of visuals in a publication

- **Abstract -** Graphical Abstract
- **Introduction -** Process flow, conceptual mapping
- **Data and methods -** Process and data flow; geographical and conceptual mapping
- **Results -** All types
- **Discussion -** All types
- **Supplemental Materials -** All types



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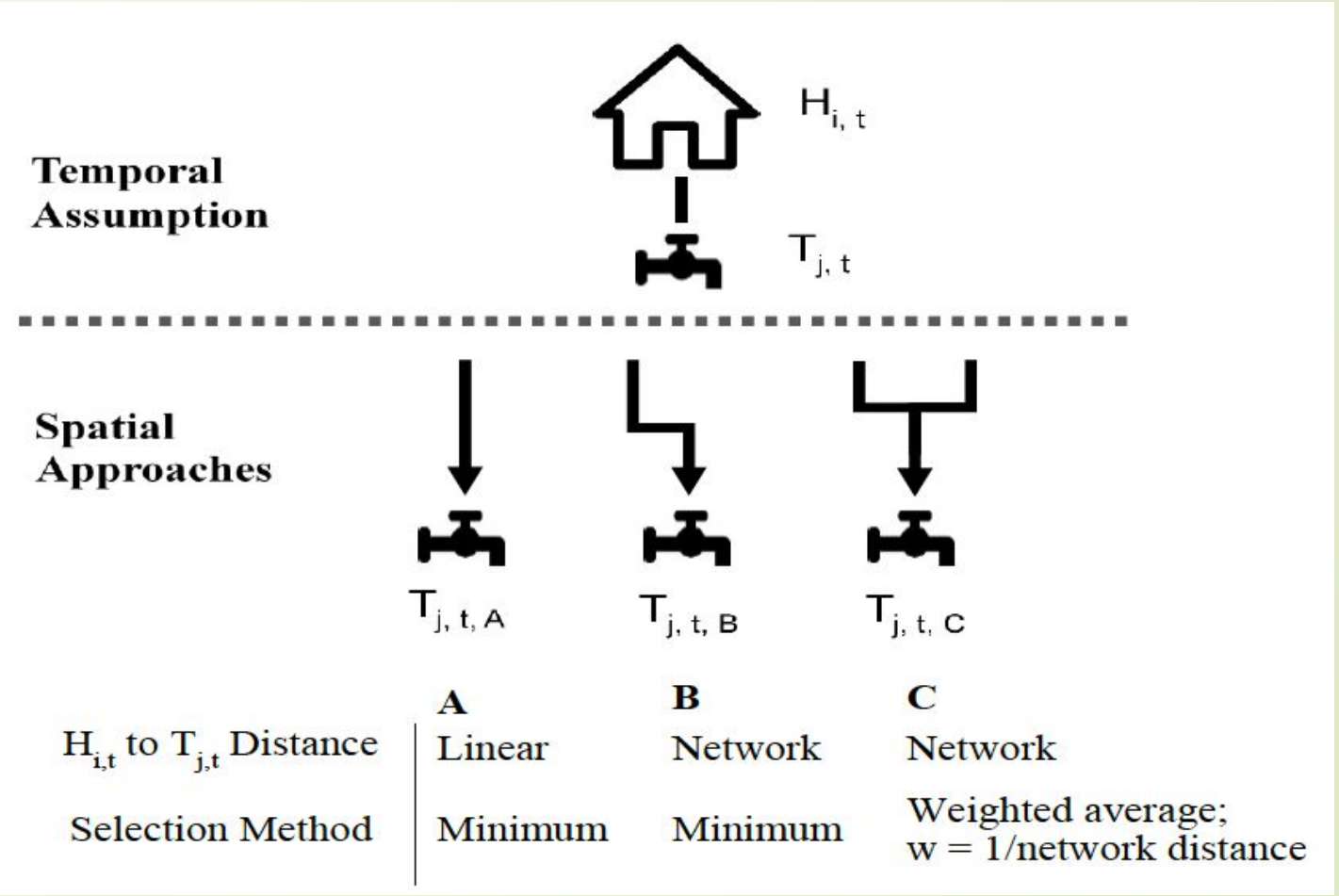
Schematics, Illustrations, Visuals

http://dx.doi.org/doi:10.1016/j.ijheh.2016.09.019

- **Process-based**
- **Structure-based**

- Covert a list or a table into a visual
- Simplify or clarify compl structures
- Compact information



	A	B	C
$H_{i,t}$ to $T_{j,t}$ Distance	Linear	Network	Network
Selection Method	Minimum	Minimum	Weighted average; w = 1/network distance

Figure 1. Schematic of three spatial approaches (S: A, B, and C). Households (Hi) and potential source taps (Tj) are first selected based on same-day sampling (t), and then source taps are selected based on measures of proximity (Euclidean and network distances).

Process-based Visuals

- **Time course and cycles** -sequence of steps
- **Flow charts -** sequence of steps and a decision tree
- **Gantt charts -** sequence of steps, roles and milestones

Could be

- oversimplified
- overwhelming
- confusing

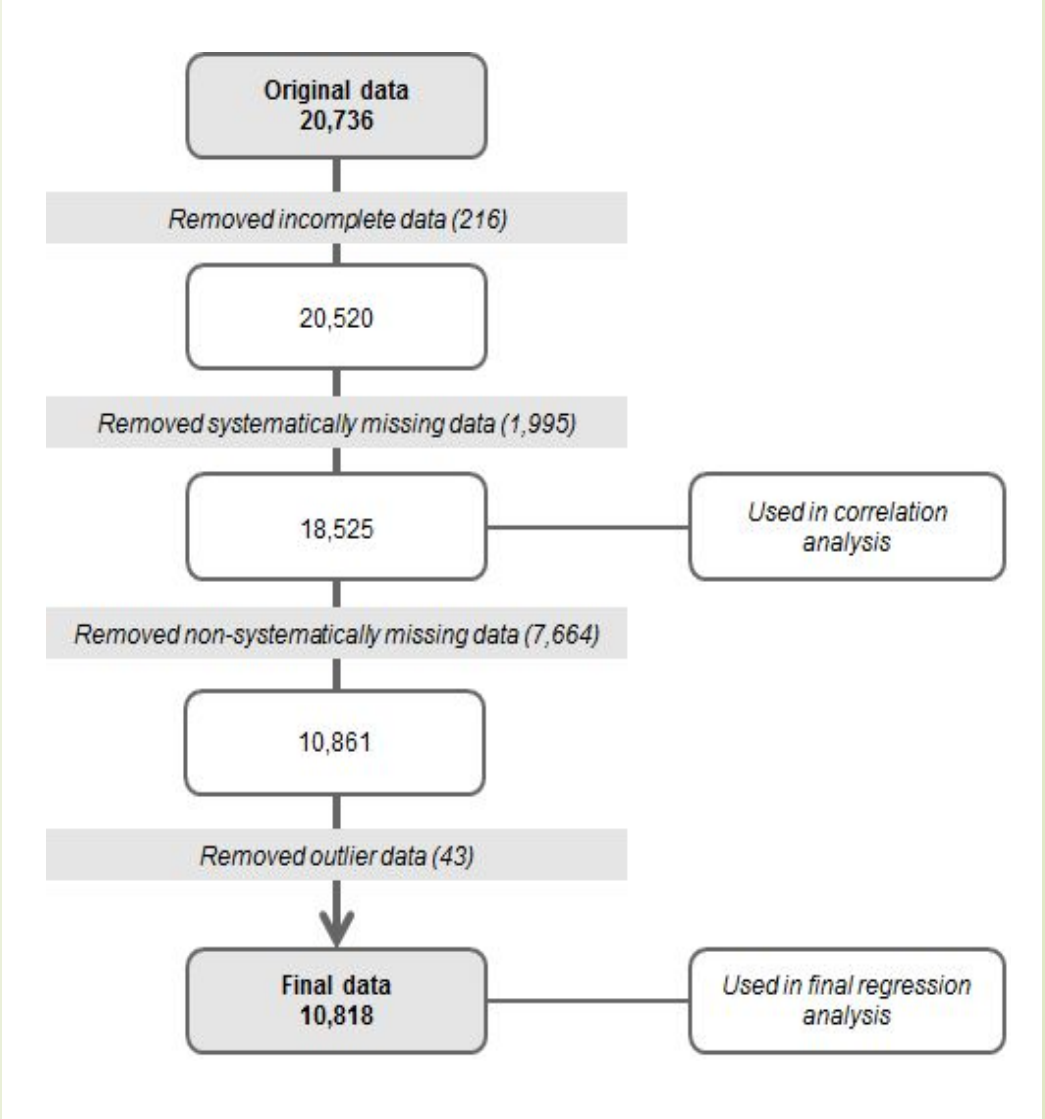


FIG. 1 DATA PROCESSING STEPS AND SUBSEQUENT SAMPLE SIZE REDUCTION

Structure-based Visuals

- **Hierarchy -** organization, order, relationships
- **Relationship -** properties, qualities, quantities
- **Diagrams -** sequence of steps, roles and milestones

- Covert a list or a table into a visual
- Simplify or clarify a complex structure
- Compact the volume

Systematization

Building process- and structure- based graphs:

- Compilation
- Relationship
- Organization
- Properties

Challenges:

- Complex
- Take time to understand
- Color clash
- Small font size

Advantages:

- Big volume of data
- Variety of data
- Versatility
- Teaching tool

Solutions:

- Testing for comprehension
- Testing for perception
- Arrangement
- User control

Next steps:

- Edit, review, seek feedback
- Repeat

Effective communications