Qeios

Peer Review

Review of: "A Case Study of the Management Information System in the Coffee Industry in SW Ethiopia"

Muhammad Imam Ma'ruf[1,2]

1. Doctoral School of Economic and Regional Sciences, Hungarian University of Agriculture and Life Sciences, MATE, Hungary; 2. Development Economics Study Program, Universitas Negeri Makassar, Indonesia

Overall Assessment

This study presents a timely investigation into the application of Management Information Systems (MIS) within the coffee industry of Southwestern Ethiopia, addressing a critical gap in digital agricultural transformation. While the research topic holds substantial relevance for agricultural modernization, the manuscript requires significant revisions to meet the rigorous standards of a reputable international journal. Below, I provide a detailed evaluation structured by key sections, followed by actionable recommendations for improvement.

Title and Scope

The title clearly conveys the research focus—a case study on MIS implementation in Ethiopia's coffee sector. However, it could be refined to explicitly highlight the study's *novelty* (e.g., by specifying the technological framework or outcomes analyzed). The scope is appropriately narrow, but the introduction should better articulate the study's *unique contribution* to existing literature on MIS in agriculture, particularly in low-resource settings.

Introduction: Strengths and Gaps

The introduction effectively contextualizes the importance of MIS for agricultural efficiency and decision-making, citing contemporary challenges such as food insecurity and climate change. However, it lacks a *critical literature gap* that justifies the study's necessity. For instance, while the authors mention Ethiopia's coffee industry, they fail to highlight how this study addresses *context-specific barriers* (e.g., limited digital infrastructure, farmer literacy) that hinder MIS adoption in similar regions. The transition

doi.org/10.32388/ROUE9Y

to the research objectives is abrupt; a clearer *theoretical linkage* between global MIS applications and Ethiopia's unique socio-agricultural landscape would strengthen coherence.

Literature Review: Depth and Theoretical Rigor

The literature review provides a broad overview of technologies like IoT, GIS, and precision agriculture, aligning with Agriculture 4.0/5.0 paradigms. However, it suffers from three key limitations:

1. **Thematic Disorganization**: The discussion jumps between technologies (e.g., RS, FMIS) without synthesizing their *interdependencies* or comparative efficacy. A structured taxonomy (e.g., classifying technologies by function—data collection, analysis, decision support) would enhance clarity.
2. **Underdeveloped Critical Analysis**: While technologies are described, their *limitations in resource-constrained contexts* (e.g., high costs, scalability issues) are overlooked. For example, IoT's feasibility for smallholder farmers warrants discussion.
3. **Weak Theoretical Foundation**: The review misses opportunities to anchor arguments in established frameworks (e.g., Diffusion of Innovation Theory for technology adoption). Citations are plentiful but often descriptive rather than analytical.

Conclusion and Recommendations: Practicality and Originality

The conclusion reiterates the potential of MIS to transform Ethiopia's coffee sector but lacks *specificity* in actionable pathways. For instance:

1. The recommendation to "integrate FMIS, IoT, and DSS" is commendable but overly generic. *How* these technologies should be prioritized or adapted for local constraints (e.g., low internet penetration) remains unaddressed.
2. The call for "applied research" is vague. A proposed *implementation roadmap* (e.g., pilot studies, public-private partnerships) would elevate impact.
3. The societal implications of MIS adoption (e.g., equity in access, gender disparities in technology use) are ignored, despite their relevance to SDGs.

Methodological Concerns

As a case study, the manuscript would benefit from:

1. A clearer *research design* (e.g., data sources: interviews/surveys with farmers vs. institutional stakeholders).
2. *Triangulation* of qualitative and quantitative data to validate findings.

3. *Ethical considerations* (e.g., informed consent, data privacy) given the involvement of local communities.

Recommendations for Revision

1. **Theoretical Enhancement**: Ground the study in a framework (e.g., Technology-Organization-Environment theory) to explain MIS adoption barriers/facilitators.
2. **Structural Refinement**: Reorganize the literature review by themes (e.g., "Digital Tools for Smallholder Farmers") with critical synthesis.
3. **Methodological Transparency**: Detail case study protocols (sampling, data collection/analysis) to ensure reproducibility.
4. **Policy Relevance**: Link recommendations to Ethiopia's *national agricultural digitization policies* (if any) to underscore practical applicability.
5. **Language and Flow**: Edit for conciseness (e.g., avoid redundant definitions of MIS) and improve paragraph transitions for logical flow.

Final Verdict

The manuscript addresses an important niche but requires substantial revisions to achieve publishable quality. With rigorous restructuring and deeper critical analysis, it could contribute meaningfully to discourse on ICT4D (Information and Communication Technologies for Development) in agriculture. I recommend *major revisions* before reconsideration.

Declarations

Potential competing interests: No potential competing interests to declare.