The BOYS
Leader: (G1401211006) Angga Fathan Rofiqy
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TA2: Observing a PUSAKA collaboration meeting: SABAR and $K_1K_2K_3$
Due: Two days after observing the meeting: 24 Februari

1. Observe a PUSAKA collaboration meeting (in class).
2. Complete the write-up as instructed below. Post on LMS as a team TA2 document with this pattern of filename: TA2.Teamname.pdf (or doc or whatever filetype).

PUSAKA collaboration meeting report

Collaborators:
    Akbar Rizki, S.Stat., M.Si.
    Laily Nissa Atul Mualifah, S.Si., M.Si.
Domain Expert:
    Name: Dr. Arya Widura Ritonga, S.P., M.Si. ,
    Background: Agronomy and Horticulture Department
Date: 22 February 2024

K_1: Kualitatif
        Summarize the domain expert's problem and/or question. *How were the data collected?* Be sure to write what their *overall research goal(s)* are and how they will use the answers to their research questions (i.e., *what is their intended outcome* of the research). Also, be sure to write down *what their specific scientific questions* are. If the statistical collaborators did not ask the domain expert about their goals and scientific questions, you must ask so that you can fulfill this assignment.
        Answer:
                The overall research goals of Dr. Arya are to identify superior sweet corn varieties developed by IPB that can thrive across different production areas in Indonesia through a multi-location trial, and to obtain one variety that is stable and broadly adaptable to be branded and marketed.
                Fifteen promising hybrids have been developed and tested in Bogor over two planting seasons during COVID-19, measuring growth, yield, disease resistance, shelf life, and kernel quality. Three hybrids performed well against two commercial varieties. For the new multi-location trial, these three hybrids and two commercial varieties will be tested in areas with conditions similar to Bogor, which are priority sweet corn production centers and tourist sites.
                The specific scientific questions are: Which locations are suitable for testing? What experimental design should be used? Which of the 15 IPB varieties is most stable across sites? And how do the IPB varieties compare to

current commercial varieties in productivity, disease resistance, and corn quality? The multi-location study will provide data to identify one superior IPB sweet corn variety that can be marketed as adaptive, high-yielding, and disease-resistant.

K_2: Kuantitatif

Summarize the statistical collaborators' _quantitative contribution/advice_, if any. Did the _domain expert understand the statistics?_ If the statistical collaborators you observed did not get this far with the project, describe what you think might be appropriate for K_2.

Answer:

The statistical collaborators advised using the AMMI (Additive Main Effects and Multiplicative Interaction) method to test the 3 top performing IPB sweet corn hybrids along with 2 commercial varieties across multiple planting locations. This will produce a biplot showing which varieties thrive at each test site. While the minimum number of locations is uncertain, at least 2 are needed based on previous AMMI studies. To maximize results, the locations should be as consistent as possible to the conditions in Bogor. Each variety-location combination will have a minimum of 3 replications. The AMMI biplot will reveal the most stable and high yielding IPB hybrid across the diverse sites.

K_3: Kualitatif

Did the contribution/advice/solution _answer the researchers' question_s? Will it help the domain expert _achieve his or her overall research goal(s)_? Are there any _practical constraints_ _limiting the effectiveness_ of the proposed K_2 statistical solution? _What is the answer_ to the research question(s)? If the statistical collaborators you observed did not get this far with the project, describe what the domain expert said he/she would use the results for. Also, include your prediction for what may happen for K_3.

Answer:

The proposed AMMI statistical design helps address Dr. Arya's goals of finding a superior, stable sweet corn variety that can adapt across locations. The biplot results will reveal which IPB hybrid performs best at each test site. However, some specifics like the required number of locations, ideal sample size, and exact test sites are still unknown due to budget limitations. For now, the focus is on identifying one top performing hybrid through AMMI first. While this may not fully achieve the larger goal of developing multiple new high-yielding varieties to compete with commercial brands, it provides a good start for proof-of-concept and future research. The AMMI results can guide recommendations for which hybrid to further develop and commercialize.

SABAR

Apply the SABAR checklist to the meeting (in the Readings #2). How well did the PUSAKA collaborators satisfy the items? Which were opportunities for improvement?

Answer:

Prepare (Siapkan): The statistical collaborators prepared well for the meeting and cleared any distractions, allowing the session with the domain

expert to flow smoothly. However, they had not interacted much regarding the domain expert's research beforehand, so came in with limited background.

Open (Awali): The statistical collaborators started the meeting positively, greeting the domain expert, agreeing on the meeting duration, and asking about his goals for the discussion.

Work (Bekerja): The statistical collaborators worked hard to understand the domain expert's problem and obtain answers to his questions.

End (Akhiri): The statistical collaborators properly budgeted time to wrap up the meeting. They summarized the decisions made and scheduled a follow-up.

Reflect (Renungkan): The statistical collaborators reflected on what went well and what could improve. They asked the domain expert for feedback to make the next meeting more effective.

In summary, the collaborators satisfied most SABAR items well, but could have been better prepared by interacting with the domain expert beforehand to understand the research context coming into the meeting. Their reflection and follow-up plan will lead to a more informed, productive next session.

Reflection

What do you think went well in the meeting? What do you think could have been improved? What might you have done differently had you been a statistical collaborator on the project? What is your overall impression of observing the very first PUSAKA collaboration meeting?

Answer:

Overall, the meeting went well and was effective. The SABAR components and K1K2K3 were demonstrated nicely throughout the session. An area for improvement would be for the statistical collaborators to communicate with the domain expert beforehand to better understand the research context coming in. This would allow them to read up on relevant methods to address the domain expert's issues. With more background knowledge, the meeting could be even more productive and cover more ground.

In summary:
- The meeting followed SABAR structure and addressed K1K2K3 appropriately. Overall it was effective.
- Statistical collaborators could have been better prepared by interacting with the domain expert prior to the session. This would give them needed context on the research goals and direction.
- With more advance preparation, the collaborators could have proposed more tailored methods and solutions, leading to a more informative discussion.

If I were a collaborator on this project, I would make sure to connect with the domain expert ahead of time to grasp the big picture and research objectives. This would allow me to review potential statistical techniques to address their issues and have an initial method in mind coming into the first meeting. Overall

this first PUSAKA collaboration meeting demonstrated good practices, but advanced preparation could make the next one even more successful.

Individual and Team Lessons Learned

What is the main lesson (pelajaran penting) each individual learned?

Answer:
- Angga: I think it is important to master the SABAR or POWER to establish a good relation & understanding between DE & collaborators. Although we actually can communicate whatever we want as long as the DE is comfortable with us.
- Jonathan: saya belajar untuk terus mengonfirmasi ulang apakah de sudah mengerti apa yang kita jelaskan
- Fawaz: I learned how the DE and Statistician communication goes both way, how the interaction worked, and how the both side understood their own jobdesk.
- Dylan: Dari pertemuan hari ini, saya dapat memahami bahwa agar kolaborasi dapat berjalan lancar diperlukan komunikasi yang baik antara domain expert dan ahli statistik. Selain itu, sebagai ahli statistik, sangat penting untuk memahami secara keseluruhan mengenai komponen SABAR.

Discuss these lessons with your team.

What is your team's main lesson learned?

Answer:
- Implement the SABAR (Siapkan, Awali, Bekerja, Akhiri, Renungkan) or Power (Prepare, Open, Work, End, Reflect) meeting framework to build a good relationship between domain expert and statistical collaborator
- Confirm understanding at every step to ensure both parties have the same perspective
- Statistical collaborators need to understand the domain expert's research goals and big picture before advising on methods
- Plan and agree on meeting duration and objectives for an effective, efficient session
- Two-way, structured communication is crucial for smooth collaboration
- Reflect after meetings and exchange feedback to improve future collaborations
- Document all major decisions to share understanding and avoid misconceptions
- Effective communication, mutual understanding, and structured meetings are key to successful collaborations where both parties' needs are met

Learning Objectives for this assignment include:
- Familiarizing oneself with the format of PUSAKA collaboration meetings
- Understanding project report format

- Applying $K_1K_2K_3$
- Applying SABAR
- Reflecting on statistical collaboration in practice