Selecting the Best Warehouse Location

A Data-Driven Approach to Enhance Farm-to-Community Connections

Presented by Group 13

Agenda

01 Context Set Up

02 Approach & Methodology

03 Final Location

04 Benefits and Consumption

What brings us here ?

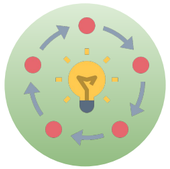
- ✓ We support local farmers by **connecting them with local demand.**
- ✓ To scale our impact, we plan to open new warehouses in Minnesota for agricultural aggregation and distribution.

- ✓ The evaluation of potential locations is multifaceted.
- ✓ Evaluating locations involves analyzing farm density and economic activity such as **Revenue.**

- ✓ Which of the five proposed locations should we choose?
- ✓ **What distinguishes the proposed county from the others.**
- ✓ Self-Serve dashboard that visually represents our results.

Attribute Selection

This is where we finalized our parameters after iterating through the several datasets and attributes at our disposal.



Proposed Location

Using the composite score we rank the counties from highest to lowest score and pick the best county.

Self-Serve Dashboard

A self-serve dashboard to adjust weights of the attributes and view dynamic county rankings.

Methodology

Combining all the selected parameters along with their weights to create a composite score.

Conclusive Evidence

Here emphasizing on why the county selected is in fact the best option

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The Attributes were selected keeping in mind the larger goal of sustainable economic growth by empowering **small scale and medium scale farmers**

Count of Small Sized farms

Aligning with goals to create equitable economic opportunities

Count of medium sized farms

Aggregating Medium Size Farms, to strengthen supply chain

Average Revenue per Small Farm

Elevating Economic status of small farms.

Average Revenue per Medium Farm

Provides regular supply of products needed to run business.

Organic Sales

Sustainable growth for the future is kept in mind

Supplier's Density

Integrating suppliers with new potential suppliers.

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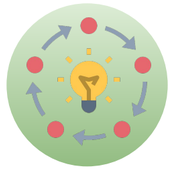

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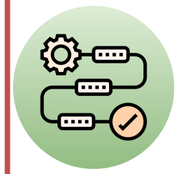

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Normalization

Helps to bring the selected attributes to the same scale

Attributes * Weights

We multiply the scaled attributes with their respective weights

Propose Location

Otter Tail is our proposed location after ranking

Weights

Selecting weights for each attribute based on the importance of the attribute

Score & Ranking

Ranking the final score from highest to lowest

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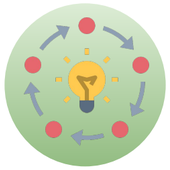

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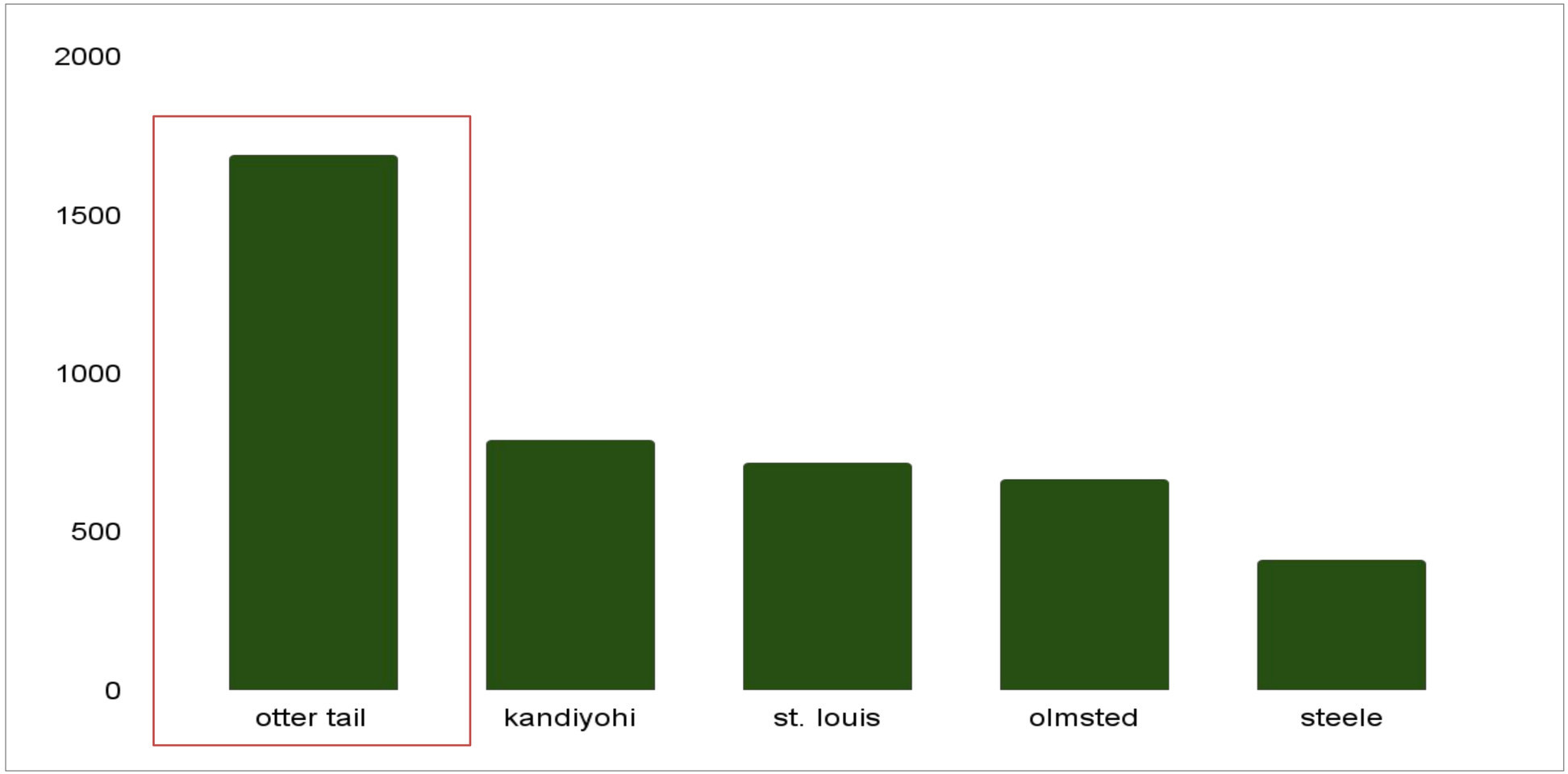
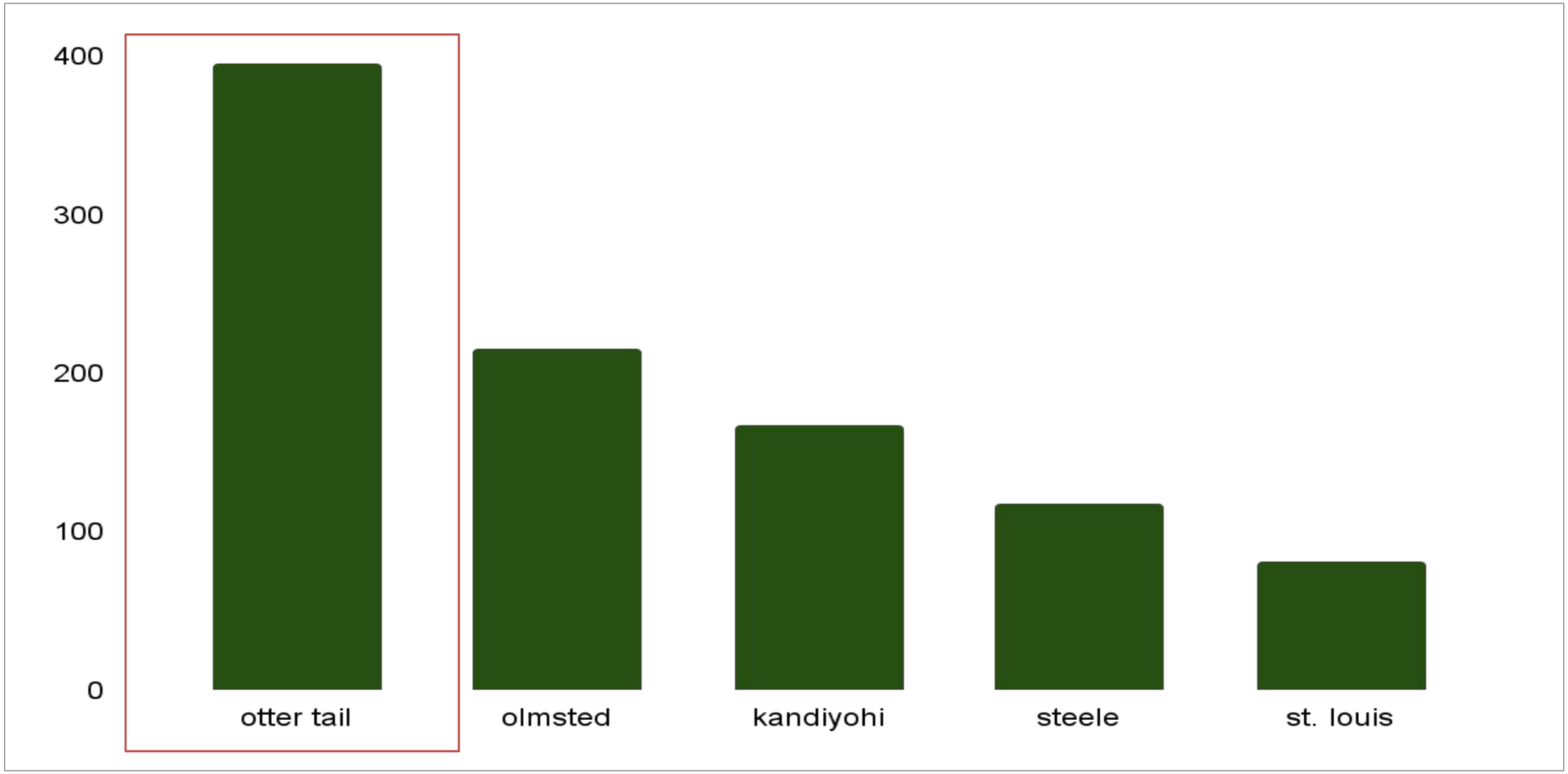
Otter Tail has the most number of **small** scaled farms (0-49999)



Otter Tail has the most number of **medium** scaled farms (50000-249000)



Otter Tail is the best location to start a new warehouse and the below matrix compares counties for each parameter

		OTTER TAIL		OLMSTED		KANDIYOHI		ST. LOUIS		STEELE	
Attributes	**Weights**	**Value**	**Rank**	**Value**	**Rank**	**Value**	**Rank**	**Value**	**Rank**	**Value**	**Rank**
Small Farm Lands (count))	0.25	**1,693**	**1**	669	4	791	2	718	3	411	5
Medium Farm Lands (count)	0.25	**396**	**1**	215	2	168	3	82	5	118	4
Small Farm land Avg Revenue ($)	0.15	**7,677**	**3**	8,072	2	4,889	5	8,407	1	4,968	4
Medium Farm land Avg Revenue ($)	0.15	**120.8K**	**4**	126.2K	3	126.9K	2	99.1K	5	131.7K	1
Organic Farm Land (Count)	0.15	**20**	**1**	8	2	7	3	4	5	5	4
Supplier Density	0.05	**0**	**4**	1	3	5	2	8	1	0	4
Composite Ranking			**1**		3		2	4		4.3	5

Our goal was to choose a county that provides the best opportunity at **sustainable economic growth while empowering marginalized farmers and we believe succeeding at that due to the following**

Otter Tail are runaway with the **most small scaled and medium scaled farms** in comparison to the other 4 counties

Otter Tail has slightly lesser but comparable **average revenue per farm** for both small and medium scale farmers. **This shows that they have the potential to improve and improve their average per farm**

Otter Tail has the most organic farms by a large margin in comparison to the other 4 counties

Otter Tail is has the highest composite score based on the above attributes and is the ideal county to start the new warehouse location

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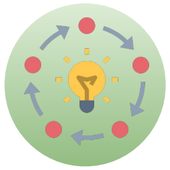

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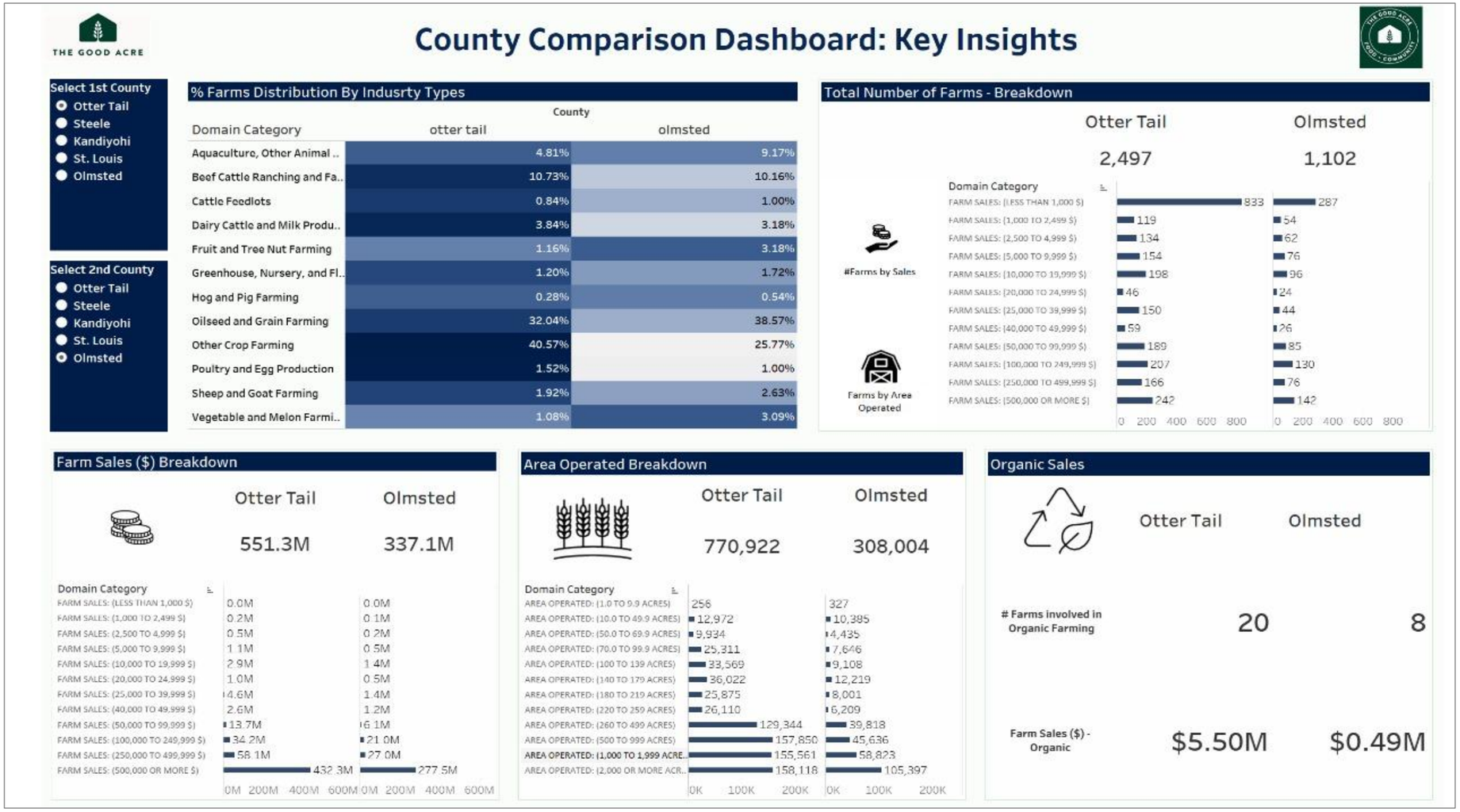
Selecting Warehouse Location

- ✓ To make our solution even more adaptable, we developed a self-serve dashboard. This tool allows users to adjust the weights assigned to each parameter dynamically.
- ✓ For example, if a user prioritizes proximity to demand centers over farm density, they can tweak the settings and see how the rankings change.

Comparative Analysis View

- ✓ This additional view gives the user flexibility to compare counties against each other by comparing their attributes.
- ✓ The view provides information on attributes beyond the 6 attributes that we focused on during our methodology. This enables the users to use the dashboard beyond our existing methodology.



Thank you

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