

Plant Resilience Project: Business Insights Report

Project Available on [GitHub](#)
Dashboard Available on [Tableau](#)

Author: Alana Henry

Role/Context: Data Analyst | Data-Driven Plant Resilience Project

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Contact: [LinkedIn](#)

Executive Summary

First-time plant owners frequently fail because plants are purchased based on aesthetic appeal rather than realistic care requirements. This leads to plant deaths, customer dissatisfaction, returns, lost revenue and lost repeat customers.

This analysis evaluated plant care difficulty, toxicity, with plant care challenges indicators analyzed as supporting guidance to highlight areas where customers most often need care clarification.

The key insight is that plant challenges are often not caused by a single factor. Nearly half the plants analyzed involve multiple interacting care demands. The Care Challenge Indicator highlights the areas that should be emphasized during guidance, with 'routine' emerging as the most common focus area.

Recommended Actions:

- Shift plant recommendations from aesthetics to care-fit matching.
- Introduce a decision tree to guide staff recommendations.
- Label plants based on difficulty level (Very Easy → Expert), clearly marking toxic plants and key focus care areas.
- Increase inventory of non-toxic, beginner-friendly plants.
- Provide plant care cards with each purchased plant to help guide customers after they leave the store.

Problem Statement/ Business Objective

Why this analysis was done:

The nursery experiences customer dissatisfaction due to plant failure after purchase, particularly among first-time plant owners.

Decision this analysis supports:

How should plants be categorized and recommended to customers to reduce failure and improve customer experience?

What success looks like:

- Fewer plant returns
- High plant survival rates
- Clear guidance for staff and customers
- Increased repeat purchases

Data Overview

A curated dataset of 49 common houseplants, including care requirements and safety information.

Scope:

- Single snapshot (non-time-series)
- Focused on plant characteristics, not customer behavior

High-level description:

Each plant is described by core care requirements (water, light, routine), difficulty tier, toxicity status, and plant category, along with care challenge indicators used to guide staff on care areas to emphasize.

Key Limitations:

- Synthetic dataset (not tied to sales or return records)
- Does not account for seasonal or location-based differences in plant performance.
- Difficulty ratings based on standardized care guidelines

Methodology

The analysis followed a structured, business-focused approach;

- Difficulty score is the primary classification used for decision-making. Care challenge indicators provide supporting guidance.
- Standardized plant care information into a consistent scale (1-3) so water, light, and routine could be compared across all plants.
- Categorized plant care (water, light, routine), to understand exactly why customers struggle.
- Identified care areas most likely to require emphasis during customer interactions.
- Reviewed tied care factors and labelled plants with multi-factor care challenge indicators.
- Grouped plants by difficulty, toxicity and care patterns.
- Translated findings into actionable business insights.

The goal:

For accurate difficulty classification and practical staff guidance.

Key Insights

Insight 1: Plant challenges are often multifactorial:

Nearly half of the plants analyzed involve more than one care challenge. The care challenge indicator flags these areas to guide staff, rather than measure absolute risk.

- Why it matters:
Customers are often not failing because of one mistake. Selling plants without guidance increases customer frustration and dissatisfaction.

Insight 2: Routine care is the most common focus area:

Routine care (pruning, consistency, humidity, monitoring etc.) is the most frequent care area requiring guidance.

- Why it matters:
Plants marketed as 'easy' may still fail if routine expectations are unclear.

Insights 3: Validation ensures accurate guidance:

Plants with tied care scores were checked against descriptive care notes to confirm which areas should be emphasized.

- Why it matters:
Prevents misleading staff recommendations

Insight 4: Toxicity significantly limits beginner-friendly options:

The majority of plants analyzed are toxic to pets and humans, reducing safe options for new plant owners.

- Why it matters:
Customers with pets and children face hidden risks that can lead to regret and returns.

Insight 5: Expert plants combine high care demands and increased safety considerations:

Plants classified as 'Expert' are frequently both toxic and flagged with multiple care challenges.

- Why it matters:
Selling these plants without clear warnings damages trust, even with experienced customers.

Business Implications

- Continuing appearance-based recommendations will maintain failure rates.
- Labeling complex-care plants as 'easy' without adequate guidance increases returns.
- Lack of toxicity clarity exposes the business to reputational risk.

- Staff are forced to rely on intuition rather than structured guidance.

Ignoring these insights keep customer dissatisfaction reactive rather than preventable.

Recommendations

1. Implement a plant recommendation decision tree

- Match plants to customer lifestyle, light access, and experience, using difficulty scores, toxicity, and care challenge indicators.

2. Flag plants with multiple care focus areas

- Clearly label plants with multi-factor care challenge indicators. Staff should focus on guidance on key areas, but treat low-difficulty multi-factor plants as easy to manage.

3. Update plant signage and care cards

- Include difficulty tier, toxicity status, and key care areas.

4. Expand beginner-safe inventory

- Prioritize non-toxic, low routine, low-light plants

5. Train staff using care challenge indicators

- Shift conversations from ‘what looks nice’ to ‘what will survive’.
- Follow the 2-step Rule:
 1. Look at Difficulty Tier first (the final decision guide)
 2. Use Care Challenge Indicator for context (conversation starters, not warnings).

Limitations & Assumptions

- Difficulty scoring is based on plant care requirements, not customer behavior.
- No actual customer usage or return data is included.
- Care Challenge Indicators provide guidance, not guaranteed outcomes.
- Multi-Factor label reflects tied care scores, not necessarily higher difficulty; staff should interpret them as emphasis cues rather than warnings.

Overall confidence: Moderate to high for staff guidance and plant classification.

Next Steps

- Collect actual return and survival data by plant type
- Track customer experience level at purchase

- Validate findings seasonally
- Test decision tree impact on returns and satisfaction

Dashboards/Visual Appendix

Interactive Tableau dashboard showing:

- Plant Care Index
- Toxicity Breakdown (Toxicity Garden)
- Average Difficulty by Plant Category
- Care Challenge Indicator (Plant Heartbreak Map)

Definitions

- **Difficulty Tier:** Overall level of care effort required to keep a plant healthy in everyday conditions.
- **Difficulty Score:** A combined score based on water, light, and routine requirements used to assign the Difficulty Tier.
- **Care Challenge Indicator:** Highlights which care areas should be emphasized when guiding customers; used for guidance, not prediction.
- **Multi-Factor:** Indicates that multiple care areas are equally demanding and should be addressed together during guidance.
- **Routine Care:** Ongoing maintenance beyond watering and light, such as consistency, monitoring, rotating, pruning, and humidity.
- **Toxic/Non-Toxic:** Shows whether a plant is harmful to pets or humans; unknown toxicity is treated as toxic for safety.
- **Snapshot Dataset:** A single point-in-time view of plant characteristics without seasonal, regional, or customer behavior data.