



SINTENO AI :: REDEFINING CONSUMER AND PRODUCT SUCCESS

by YieldWise Inc.

The Problem

- Consumer research is an ongoing process of gathering feedback through surveys to understand consumer opinions about new or existing products, brand awareness, and consumer needs.
- However, survey data is often analyzed incorrectly, leading to inaccurate conclusions about consumer preferences and misguided recommendations for product and brand improvements.
- Inadequate consumer research is a significant factor in product failure, as it can result in a failure to understand consumer needs and targeting the wrong consumers with the wrong messages.



How SINTENO Solves The Problem?

By analyzing survey data, SINTENO offers essential functionalities that are not present in current consumer research methods:

- SINTENO generates Consumer and Product Profiles that highlight crucial product attributes for ensuring consumer satisfaction, both now and in the future.
- SINTENO identifies the strengths and weaknesses of the product and provides recommendations for product improvement, marketing, and advertising.



Why All the Excitement?

- SINTENO software solutions are designed to extract valuable insights from consumer research survey data.
- SINTENO correctly analyzes survey data using advanced statistical and machine-learning methods, such as
 - ✓ The Modified Polytomous Rasch Measurement Model, and
 - ✓ Relational Bayesian Networks
- Combining these methods with proprietary algorithms, SINTENO
 - ✓ creates Consumer and Product Profiles, and
 - ✓ derives reliable business conclusions and recommendations.



Who Should Use SINTENO?

- Consumer & Market Researchers use SINTENO to uncover consumer opinions, segment consumers based on their attitudes, and more.
- Marketing & Advertising Strategists use SINTENO to pinpoint target audiences and craft highly targeted campaigns.
- Retailers leverage SINTENO to fine-tune product prices and devise effective and efficient marketing and sales strategies.
- Product designers and manufacturers rely on SINTENO to customize and optimize product attributes.



How to Use SINTENO?

- SINTENO is available as Software-as-a-Service and accessible through an Internet browser or a simple API.
- Users can upload survey data and receive analysis results via an Internet browser, email, or API.



USE CASE



Survey Sample

The client's Consumer and Market Research team conducted a survey on the brand of hygiene product. Consumers were asked to rate the product attributes related to quality, price, and advertising:

1. Product Features
2. Product Price
3. TV Promotions
4. Product Brand
5. Product Quality
6. On Display in Store



Survey Sample

Consumers rated the attributes on a scale of 5 categories:

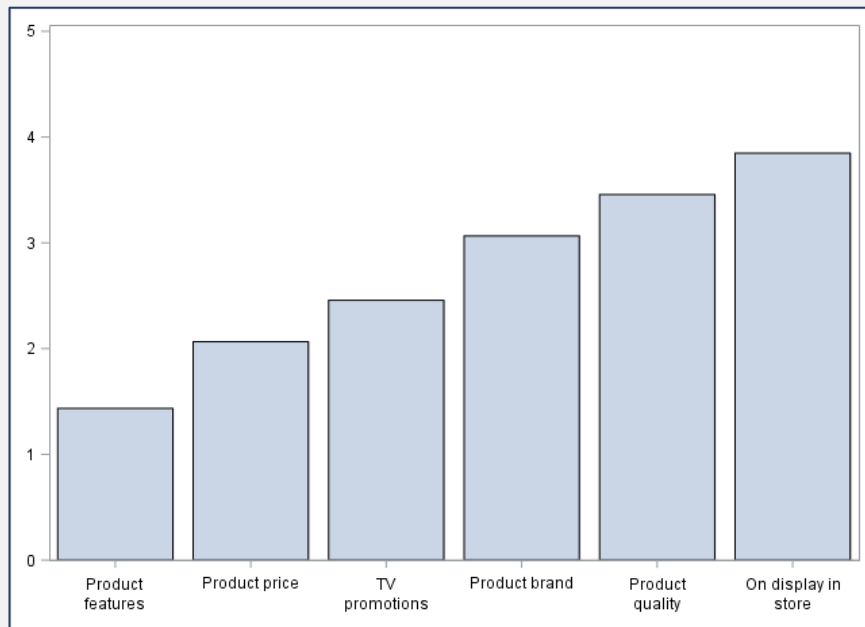
- Very Unsatisfied (1)
- Unsatisfied (2)
- Neutral (3)
- Satisfied (4)
- Very Satisfied (5)

Survey Items	Consumer PID001	Consumer PID002	Consumer PID003	Consumer PID004	Consumer PID ...	Consumer PID046
Product features	2	1	1	2	1	1
Product price	2	2	4	2	2	1
TV promotions	5	3	3	3	2	1
Product brand	5	3	3	4	3	1
Product quality	5	3	5	4	2	1
On display in store	5	3	4	5	4	2



Survey Analysis

The client's Consumer and Market Research team created a bar chart with the average scores for each survey item:



Their study found that consumers are unsatisfied with the product features, price, TV promotions, and brand.

They suggested that the company should invest in :

- Enhancing product features
- Lowering product price
- Improving TV promotions
- Strengthening the brand



Survey Analysis

But...

The client's Marketing Team violated the following rules in their analysis:

- *Averaging of scores assigned by consumers is not appropriate as scores represent “ordinal data.”*
- *Product attributes can't be assumed to have the same level of difficulty in satisfying consumer needs.*
- *Not all product attributes have equal importance in satisfying consumer needs.*

Thus...

The incorrect analysis led to incorrect conclusions.

So...

The client chose to use SINTENO to validate the conclusions and recommendations.

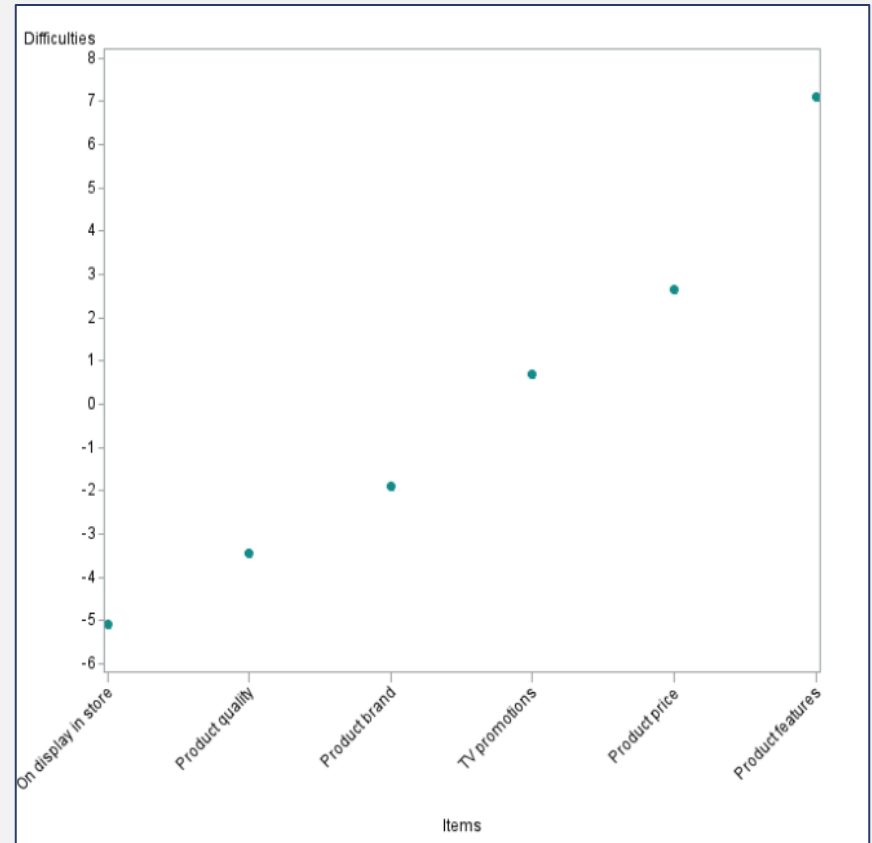


Difficulty of Attributes to Satisfy Consumers

SINTENO uses the Polytomous Rasch Measurement Model to estimate the level of difficulty in satisfying consumers for each attribute.

Attributes with lower difficulty tend to satisfy consumers easily.

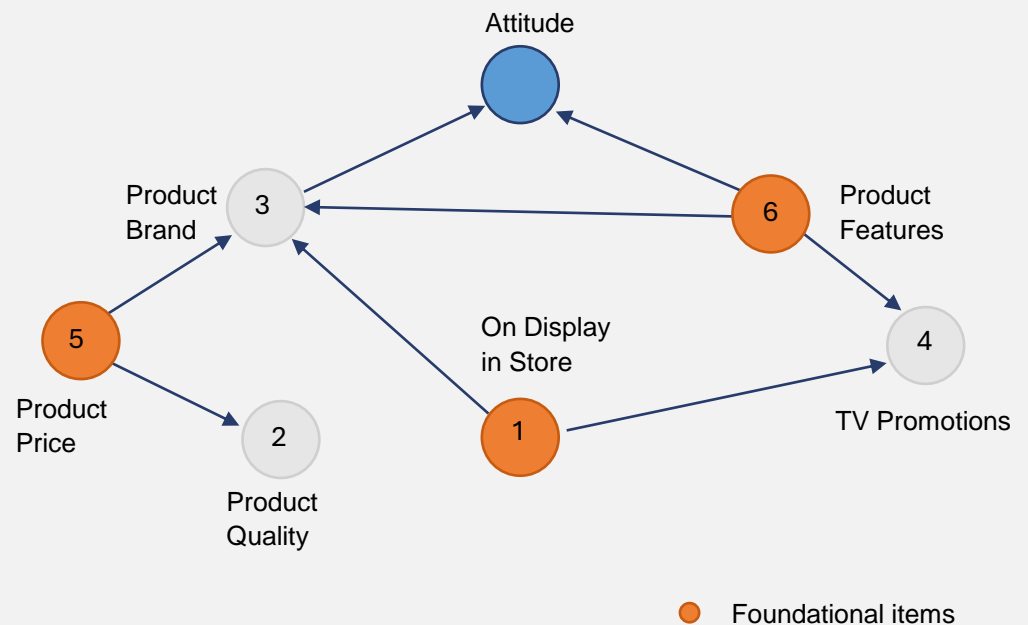
While those with higher difficulty pose a greater challenge to satisfy consumers.



Foundational Attributes

SINTENO creates Relational Bayesian Networks (RBN) using a proprietary algorithm applied to survey data. This helps identify foundational (key) attributes that are crucial for consumers' attitudes towards the product. The three foundational attributes are :

- “On Display in Store”
- “Product Price”
- “Product Features”



Consumer and Product Profile

SINTENO creates a Consumer and Product Profile to determine the appropriate rating category for each product attribute, ensuring consumer satisfaction.

The lowest score that is expected by a consumer who exhibits a positive attitude



Foundational Attributes

#	Attribute	Difficulty	Score	Attribute Importance
1	On Display in Store	-5.10	5	Foundational
2	Product Quality	-3.45	4	
3	Product Brand	-1.91	4	
4	TV Promotions	0.70	3	
5	Product Price	2.66	2	Foundational
6	Product Features	7.10	2	Foundational



Interpretation of Consumer and Product Profile

- According to RBN (slide 13), the following attributes are foundational:
 - ✓ “On Display in Store”
 - ✓ “Product Price”
 - ✓ “Product Features”
- All 3 have a causal relationship with “Product Brand” attribute, so improvement in foundational attributes will positively change consumers’ attitudes toward the brand.



Interpretation of Consumer and Product Profile

Contrary to the client's Market Research team analysis:

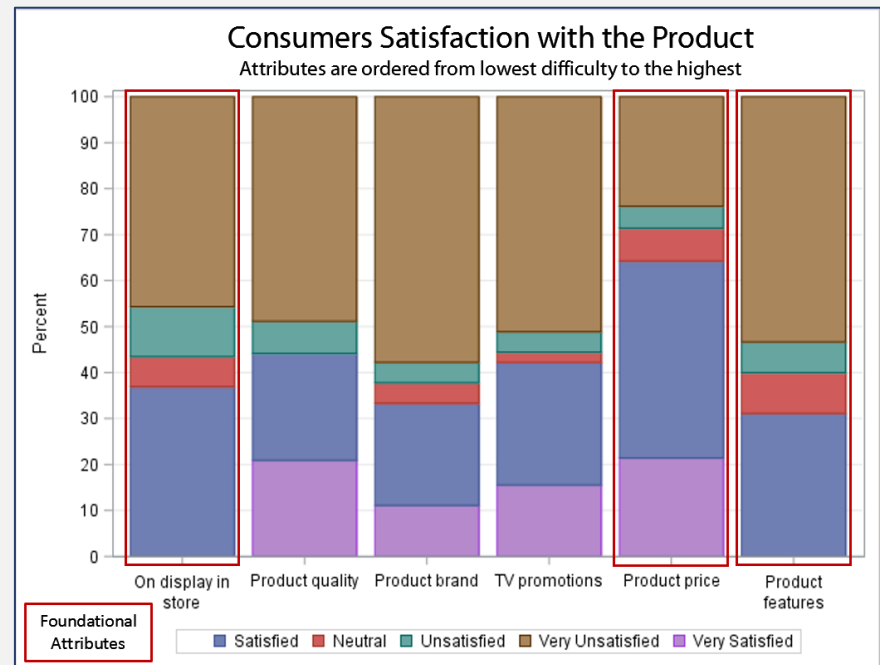
- The "TV Promotions" attribute is not essential for consumer satisfaction with the product.
- The "On Display in Store" attribute is foundational for consumer satisfaction.
- The "Product Price" attribute is crucial, but it can be difficult to meet consumer expectations. Therefore, consumers may give a low score of 2 (Unsatisfied) to this attribute and still be satisfied with the overall product.



Consumers Attitude to the Product

SINTENO uses the Consumer and Product Profile, to pinpoint the strengths and weaknesses of the product and its advertising:

- In two of foundational items, "On Display in Store" and "Product Features," over 55% of consumers are Very Unsatisfied or Unsatisfied.
- Over 67% of consumers are Satisfied or Very Satisfied with "Product Price."
- More than 60% of consumers are Very Unsatisfied or Unsatisfied with the "Product Brand", leading to a poor reputation among consumers.



SINTENO Recommendations

- Improvements related to the "On Display in Store" attribute are essential.
- No changes are necessary for the "Product Price" attribute, consumers may rate "Product Price" as low as 2, but the high price aligns with consumers' perception of the product.
- Investing in improving TV promotions is unnecessary.
- Consumers' attitude toward the "Product Brand" will improve with enhancements to the "On Display in Store" and "Product Features" attributes.



Conclusion

- Assessment of consumer attitudes conducted by averaging scores of survey data was incorrect and led to misleading recommendations.
- On the contrary, SINTENO offers a solution that accurately assesses consumer attitudes and provides actionable insights regarding improving the product and its advertising improvement.
- By identifying the product's foundational (key) attributes and aligning them with consumer preferences, SINTENO delivers practical recommendations for product enhancement.
- SINTENO's actionable insights benefit market and consumer researchers, product designers, manufacturers, retailers, and marketers.



About Us

- YieldWise Inc., has developed an analytical platform that supports applications like SINTENO. The YieldWise application suite also includes:
 - A-SCALA which focuses on redefining student success, and**
 - EXOUSIA which focuses on redefining employee success**
- YieldWise is a leading provider of innovative analytical solutions specializing in the research and development of [sophisticated analytical methods](#) and software tools for various applications such as [demand forecasting](#), design of experiments, [survey analysis](#), statistical quality control, survival analysis, time series analysis and forecasting, computer and network performance evaluation and capacity planning, [statistical and machine-learning consulting](#) and training, as well as SAS, R and Stata software training and consulting services.

