

Original Paper

The U.S. Toilet Paper Market: A Competitive Profile

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Abstract

This is the fourteenth paper that follows the footsteps of thirteen studies that have tried to analyze the competitive profiles of U.S. consumer markets: Men's Shaving Cream, Beer, Shampoo, Shredded/Grated Cheese, Refrigerated Orange Juice, Men's Razor-Blades, Women's Razor-Blades, Toothpaste, Canned Soup, Coffee, Potato Chips, Alkaline AA Batteries, and Facial Tissue.

Michael Porter associates high market share with cost leadership strategy, which is based on the idea of competing on a price that is lower than that of the competition.

However, customer-perceived quality—not low cost—should be the underpinning of competitive strategy, because it is far more vital to long-term competitive position and profitability than any other factor. So, a superior alternative is to offer better quality vs. the competition.

In most consumer markets, a business seeking market share leadership should try to serve the middle class by competing in the mid-price segment; and offering quality better than that of the competition: at a price somewhat higher to signify an image of quality, and to ensure that the strategy is both profitable and sustainable in the long run.

Quality, however, is a complex concept, consumers generally find difficult to understand. So, they often use relative price, and a brand's reputation, as a symbol of quality.

The 2008 net sales for the Toilet Paper market were \$4,117 million.

By far the most popular pack size was the 12-roll pack which constituted 38% of total sales. So, we have concentrated our statistical analysis on that size.

For 2008 we found 25 brands with 12-roll sales over \$70,000. However, three of those brands had no sales for 2007. So, we had to restrict our analysis to the remaining 22 for both years.

Using Hierarchical Cluster Analysis, we tested two hypotheses: (I) That the market leader is likely to compete in the mid-price segment, and that (II) Its unit price is likely to be higher than that of the nearest competition.

For both 2008 and 2007, the results did not support Hypothesis I. This is because both Charmin, the

market leader, and Kleenex Cottonelle, the runner-up, were found to be members of the premium segment.

However, the data supported Hypothesis II, because the unit price of Charmin was higher than that of (Kleenex) Cottonelle.

We found that relative price was a strategic variable, as hypothesized.

A pattern is emerging in price-quality segmentation analysis. In ten of the fourteen studies—that exclude Men's and Women's Razor-Blades, Ground Coffee, and Toilet Paper—the market leader was found to be a member of the mid-price segment, as we have hypothesized.

Moreover, results in seven markets supported Hypothesis II.

We also discovered four strategic groups in the industry.

Keywords

U.S. Toilet Paper Market, market segmentation, cost leadership strategy, price-quality segmentation, market-share leadership, relative price a strategic variable, strategic groups

1. Introduction

This is the fourteenth paper that follows the footsteps of *thirteen* studies that have tried to analyze the competitive profiles of U.S. consumer markets: Men's Shaving Gel, Beer, Shampoo, Shredded/Grated Cheese, Refrigerated Orange Juice, Men's Razor-Blades, Women's Razor-Blades, Toothpaste, Canned Soup, Coffee, Potato Chips, Alkaline AA Battery, and Facial Tissue (Datta, 2012, 2017, 2018a, 2018b, 2018c, 2019a, 2019b, 2020a, 2020b, 2020c, 2020d, 2021, 2023).

This research relies on a broader, *integrated* framework of market segmentation which includes *both* the demand *and* supply sides of the competitive equation. This approach is based on the idea that *starting* with “*product*” characteristics, is both an *easier* and more *actionable* way of segmenting markets than the traditional marketing approach, that typically begins with the customer or “*people*” characteristics (Datta, 1996).

This research is based on the notion that the path to market share leadership does *not* lie in lower price founded in *cost leadership* strategy, as Michael Porter (1980) suggests. Rather, it is based on the premise—according to the PIMS (Note 1) database research—that it is *customer*-perceived quality that is crucial to long-term competitive position and profitability. So, the answer to market share leadership for a business is to *differentiate* itself by offering quality *better* than that of the nearest competition (Datta, 2010a, 2010b, 2012, 2017, 2018a, 2018b, 2018c, 2019a, 2019b, 2020a, 2020b, 2020c, 2020d, 2021, 2023).

1.1 How to Make This Idea Operational?

To make this idea *operational* requires *two* steps. The *first* is to determine *which* price-quality segment to compete in? Most consumer markets can be divided in *three basic* price-quality segments: *premium*, *mid-price*, and *economy*. These can be extended to *five* by adding two more: *ultra-premium* and *ultra-economy* (Datta, 1996, 2012, 2017, 2018a, 2018b, 2018c, 2019a, 2019b, 2020a, 2020b, 2020c,

2020d, 2021, 2023).

The answer to market share leadership lies in serving the *middle* class by competing in the *mid-price* segment. This is the socio-economic segment that represents about 40% of households in America (Datta, 2011). It is also the segment that Procter & Gamble (P&G), a leading global consumer products company, has successfully served in the past (Datta, 2010b, 2012, 2017, 2018a, 2018b, 2018c, 2019a, 2019b, 2020a, 2020b, 2020c, 2020d, 2021, 2023).

2. The Strategic Importance of Price Positioning

The *second* step for a business seeking market share leadership, is to position itself at a price that is somewhat *higher* than that of the nearest competition. This is in accord with P&G's practice based on the idea that although higher quality does deserve a "price premium," it should *not* be excessive (Datta, 2010b). A higher price offers two advantages: (1) It promotes an image of quality, and (2) It ensures that the strategy is both profitable and sustainable in the long run (*ibid*).

As mentioned above, the *middle* class constitutes about 40% of households in America. So, in a *competitive* market one would normally expect *more* than one major brand competing in the *mid-price* segment.

A classic example of price positioning is provided by General Motors (GM). In 1921 GM rationalized its product line by offering "a car for every purse and purpose"—from Chevrolet to Pontiac, to Oldsmobile, to Buick, to Cadillac. More importantly, GM positioned each car line at the *top* of its segment (Datta, 1996, 2010a, 2017, 2018a, 2018b, 2018c, 2019a, 2019b, 2020a, 2020b, 2020c, 2020d, 2021, 2023).

A more recent and familiar example is the *economy* chain, Motel 6, which has positioned itself as "offering the *lowest* price of any national chain." Another example is the Fairfield Inn. When Marriott introduced this chain, it targeted Fairfield at the *economy* segment. And then it positioned it at the *top* of that segment (Datta, 1996, 2017, 2018a, 2018b, 2018c, 2019a, 2019b, 2020a, 2020b, 2020c, 2020d, 2021, 2023).

2.1 Close Link between Quality and Price

As mentioned above, *customer*-perceived quality is the most important factor contributing to the long-term success of a business. However, quality cannot really be separated from price (Datta, 1996). Quality, in general, is an *intricate*, multi-dimensional concept that is difficult to comprehend. So, consumers often use *relative* price—and a brand's *reputation*—as a symbol of quality (Datta, 2010b, 2012, 2017, 2018a, 2018b, 2018c, 2019a, 2019b, 2020a, 2020b, 2020c, 2020d, 2021, 2023).

3. A Short History of the U.S. Toilet Paper Industry

What did people do *before* toilet paper?

According to National Geographic, hundreds of million people around the world, especially in Asia and Middle East, do *not* use toilet paper. Instead, they finish their bathroom visit with a "clean rinse of

water” (Note 2; *italics* added).

However, they use *water* with their *left* hand for cleaning their behinds. As such, it is considered an *insult* to offer the left hand for a handshake (Note 3).

Unlike the Western countries, open-flushing *squat toilets* are extremely common in countries in Southeast Asia, Central America, and Africa (Note 4). A big benefit of such a toilet is that a deep and full squat is the ideal, and most *natural* position for pooping. *Squatting* when pooping has been shown to provide a more *optimal* angle for the anorectal cavity than sitting (Note 5; Note 6).

In Ancient Rome, people did not have the luxury of a toilet at home. So, they used *public* bathrooms that were *dirty* and uncomfortable. Those bathrooms also *lacked* privacy, because they did not have toilet dividers (Note 3).

At that time, Romans wiped with a *sea sponge* that was attached to a stick. After wiping they *cleaned* it off with a dip in a *basin* filled with vinegar and saltwater (Note 3).

Unfortunately, many Romans could *not* afford personal sponges. It was therefore a common practice to *share* them, which then became a breeding ground for *germs* and *disease* (Note 3).

Most countries in Europe usually have a *bidet* in their washrooms. A bidet includes a spout that streams water like a water fountain to rinse and clean (Note 6).

China was the *first* country to use toilet paper. By 1393 rice-based toilet paper was mass-produced for the Chinese imperial family. On the contrary, it took until 1857 for the Western world to come up with a mass-produced toilet paper (Note 2).

The *first* toilet paper in America was invented in 1857 by a New York entrepreneur, Joseph Gayetty. The next advance in toilet paper occurred in 1890, when two brothers, Clarence and Irvin Scott, popularized the concept of toilet paper on a roll. However, Americans remained *embarrassed* by bodily functions. Toilet paper was such a *taboo*, that no one wanted to ask for it by name. So, it was an *uphill* battle to get the Americans to buy the toilet paper openly (Note 7).

In the nineteenth century, many Americans began using newspapers and pages from catalogs—for example, Sears & Roebuck catalog, and Farmers’ Almanac—as a substitute for toilet paper (Note 8; Note 3).

However, later on, the companies printed their catalogs on *glossy* pages, which made wiping *uncomfortable* (Note 3).

At the end of the 19th century, more and more houses were being built with sit-down *flush* toilets that were connected to indoor plumbing. What people really then wanted was a product that could be *flushed* away with minimal damage to the pipes. So, the toilet paper companies began to advertise, that the product was recommended by both *doctors* and *plumbers* (Note 7).

In 2019 America spent more than \$6 Billion every year on toilet tissue—more than any other country in the world (Note 7).

The toilet paper market in America has essentially plateaued. The real growth in this market is now occurring in *developing* countries (Note 7).

4. Charmin Toilet Paper (P&G)

In the early 1900s, toilet paper was still being marketed as a *medicinal* product. But in 1928, Hoberg Paper Co. of Green Bay, Wisconsin, introduced a brand called *Charmin*, and marketed it with a logo that depicted a beautiful woman. The *ingenuity* of this campaign was that by projecting softness and femininity, the company was able to *avoid* talking about the real function of toilet papers, that no one wanted to talk about (Note 7).

And this made Charmin a *successful* brand, and helped it to survive the Great Depression of 1929 (Note 7).

In 1957 P&G acquired Hoberg Paper Co (Note 9).

In 2008 Charmin was the *market leader* with a brand market share of 24% (Table 1).

In an advertising campaign that lasted *twenty* years, P&G advertised a fictional character, Mr. Whipple, who told the audience: “Please don’t squeeze the Charmin! (Note 9).

Eventually, Mr. Whipple was replaced by the “Charmin Bear.” In 2001 three cubs were also added to the family (Note 9).

5. Cottonelle (Kimberly Clark)

Kimberly Clark introduced (Kleenex) Cottonelle Toilet Paper In 1972 (Note 10). In 2008, Cottonelle was the runner-up with a brand market share of 14% (Table 1).

6. The Scott Paper Co.

The Scott Paper Co. was founded in 1879. It was acquired by the Kimberly-Clark Corp in 1995 (Note 1).

7. Quilted Northern (Georgia-Pacific)

Georgia Pacific has two toilet paper brands: Quilted Northern and Angel Soft (Note 11). In 2005 it was acquired by Koch Industries to become a privately-held, wholly-owned subsidiary (Note 12).

8. Private Brands

Another *major* player in the Toilet Paper market in 2008 was the Private Brands. It is important to clarify what *private* brands are. These are brands made exclusively for individual *retailers*, e.g., a supermarket, or a drug store. Usually, such brands are targeted at the *economy* segment, and, as such, are generally sold at prices *lower* than those of major *mid-price* brands. One reason retailers *like* private brands, is because private brands tend to be more *profitable* than leading name brands (Datta, 2018b, 2018c, 2020b, 2020c, 2021, 2023).

However, in the Toilet Paper market, *both* the market leader, Charmin, and the runner-up Kleenex Cottonelle, were members of the *premium* segment. So, this provided an *opening* to the Private Brands to compete in the *mid-price* rather than the usual *economy* segment.

In 2008 Private Brands had achieved—*collectivity*--a brand market share of 16% (Table 1).

9. The U.S. Toilet Paper Market—Price-Quality Segmentation Profile

This study is based on U.S. retail sales for the U.S. Toilet Paper market for 2008 and 2007 (Note 13). The data includes total dollar and unit sales, no-promotion dollar and unit sales, and promotion dollar and unit sales (Note 14).

For 2008 the total U.S. retail sales of Toilet Paper were \$4,117 million (Table 1). The roll sizes varied from 36 to 1, with the *12-roll* size being by far the *most* popular: with a 38 % share, and with sales of \$1,544 million (Table 1).

So, we have focused cluster analysis on this size.

9.1 Hierarchical Clustering as the Primary Instrument of Statistical Analysis

We have used cluster analysis as the *primary* statistical tool in this study. As suggested by Ketchen and Shook (1996), we have taken several steps to make this effort as *objective* as possible:

- First, this study is *not* ad-hoc, but is grounded in a theoretical framework, as laid out below.
- Second, we are fortunate that we were able to get *national U.S.* sales data for our study for *two* years.
- Thus, this data provided a *robust* vehicle for subjecting cluster consistency and reliability to an *additional* test.
- Third, we wanted to use two different techniques—KMeans and Hierarchical—to add another layer of cluster consistency and reliability. However, we found Hierarchical cluster analysis to be *superior* in meeting that test. So, we did *not* consider it necessary to use the KMeans technique.

9.2 Theoretical Foundation for Determining Number of Clusters—and Their Meaning

As already stated, a major purpose of this paper is to identify the market share *leader* and determine the price-quality segment—based on unit *price*—it is competing in.

An important question in performing cluster analysis is to figure out the *number* of clusters based on an *a priori* theory. Most consumer markets can be divided in three *basic* price-quality segments: *premium*, *mid-price*, and *economy*. These three basic segments can be extended to *five*: with the addition of *super-premium* and *ultra-economy* segments (Datta, 1996).

Therefore, *three* represents the *minimum* and *five* the *maximum* number of clusters (Datta, 2012, 2017, 2018a, 2018b, 2018c, 2019a, 2019b, 2020a, 2020b, 2020c, 2020d, 2021, 2023).

An equally crucial issue is to find out what each cluster (e.g., *economy*, *mid-price*, and *premium*) really *means*.

Perhaps a good way to understand what each price-quality segment stands for in real life is to look at a socio-economic *lifestyle* profile of America. It reveals *six* classes (Note 15). Each class is associated with a price-quality segment typified by the retail stores where they generally shop: each a symbol of their *lifestyle* (Datta, 2011).

9.3 Guidelines for Cluster Consistency and Reliability

In addition to laying a theoretical foundation for the *number* of clusters, we set up the following guidelines to *enhance* cluster consistency and reliability (Datta, 2012, 2017, 2018a, 2018b, 2018c, 2019a, 2019b, 2020a, 2020b, 2020c, 2020d, 2021, 2023):

- In general, there should be a *clean break* between *contiguous* clusters.
- The *anchor* clusters—the top and the bottom—should be *robust*. In a cluster-analysis project limited to a range of three to five clusters, a robust cluster is one whose membership remains constant from three- to four-, or four- to five-cluster solutions.
- Finally, we followed a step-by-step procedure to determine the optimal solution. First, we start with *three* clusters. Thus, the bottom cluster obviously becomes the *economy* segment and the top cluster the *premium* segment. Next, we go to *four* clusters, and *tentatively* call them: *economy*, *mid-price*, *premium*, and *super-premium*. Then we go to *five* clusters. If the membership of the *bottom* cluster remains unchanged from what it was in the four-cluster result, it clearly implies that the *ultra-economy* segment does *not* exist. Then, if the membership of the *top* cluster also remains the same from a four- to a five-cluster solution, then the *top* cluster becomes the *super-premium* segment.
- This signifies that even in a five-cluster solution we have only *four* price-quality segments: *economy*, *mid-price*, *premium*, and *super-premium*. It means that either the *premium* or the *mid-price* segment consists of *two sub-segments*.

9.4 External Evidence to Validate Results of Cluster Analysis

Whenever possible, we have tried to seek *external* evidence to validate the results of cluster analysis. For example, many companies identify on their websites a certain brand(s) as a *premium* or luxury brand. A case in point is that of P&G which says that its plan is to compete in all “price points:” *super-premium*, *premium*, and *mid-price*: *except* the *economy* segment (Datta, 2010b).

10. Testing Hypotheses

- I—That the market-share leader would be a member of the *mid-price* segment.
- II—That the market-share leader would carry a price tag that is *higher* than that of the nearest competition.

11. Results of Hierarchical Cluster Analysis

In Table 1 we present the cluster analysis results for 2008 that involved 22 brands, with 12-roll sales over \$70,000. However, three brands which met this test, had to be dropped, because they had zero sales for 2007.

For *both* 2008 and 2007, the results did *not* support Hypothesis I. This is because *both* Charmin, the market leader, and (Kleenex) Cottonelle, the runner-up, were found to be members of the *premium* segment.

Yet, the data supported Hypothesis II, because the unit price of Charmin was *higher* than that of (Kleenex) Cottonelle.

12. Why the Cluster Analysis Results Did Not Support Hypothesis I?

Both Facial Tissues and Toilet Paper are *paper* products. But why, while the results for Facial Tissue supported Hypothesis I, those for Toilet Paper did not?

Facial tissues are also known as “paper handkerchiefs.” The primary need served by facial tissue is to blow one’s face: relatively a *minor* inconvenience. They are a replacement of a handkerchief, with the additional advantage that they are *disposable*; that do not need washing, and are more *hygienic* than handkerchiefs (Note 16).

On the contrary, toilet activity is much more complex, in which personal *hygiene* plays a critical role. Although a *bidet* is quite popular in Europe, as we have mentioned earlier, very few people in America use it.

So, in the absence of a substitute, Americans are willing to pay *premium* prices for toilet paper, because it serves an *important* need: an *antidote* to germs and disease.

13. Relative Price a Strategic Variable

Finally, we performed one more test to determine the consistency and reliability of the results of cluster analysis in this study. So, we *ranked* the unit price of each brand for 2008 and 2007 for 12-roll Toilet Paper. All *three* measures of *bivariate* correlation—Pearson, and non-parametric measures Kendall’s tau_b, and Spearman’s rho—were found to be *significant* at an amazing 0.01 level!

We believe these surprising results became possible only because management in the Toilet Paper industry must have been treating *relative* price as a strategic variable, as we have hypothesized.

14. The Role of Promotion

For 2008, we performed *bivariate* correlation between total retail sales vs. promotional (PROMO) sales. The results were significant for *all* three measures—Pearson, Kendall, and Spearman—at an *amazing* 0.01 level.

In Table 2 we present the promotional intensity of individual brands. What we see is a pattern: *higher* a brand’s sales, *higher* its promotional intensity. The average score for 2008 was 46%. The following are the *highlights*:

- The *Heavy* group includes (Kleenex) Cottonelle, the *runner-up*, and Charmin, the *market leader*. It also features Quilted Northern, Scott 1000, and Angel Soft: brands that each had a respectable market share, that is *above* 10%.
- The Private Brands fall in the *Moderate* group with a score of 35%. Since they are competing in the *mid-price* segment, their membership of the moderate group makes a lot of sense.

15. A Pattern Emerging in Price-Quality Segmentation Analysis

This is the *fourteenth* study that encompasses analysis of competitive profiles of U.S. consumer markets. In each study we have tested two hypotheses:

- I—That the market leader would be a member of the *mid-price* segment.
- II—That the market leader would carry a price tag that is *higher* than that of the nearest competition.

16. Men’s and Women’s Razor-Blade Markets Did Not Support our Theory

In the Men’s Razor-Blade market for 2008, the *market leader* was Gillett Mach 3 in the *premium* segment, and Gillette Fusion, the *runner-up*, was in the *super-premium* segment (Datta, 2019a)

In the Women’s Razor-Blade market for 2008, the market leader Gillett Venus, the *market leader*, and Schick Intuition Plus, the *runner-up*, were *both* members of the *premium* segment (Datta, 2019b).

So, what are the factors that these two markets have deviated *radically* from our theory? (Datta, 2019a, 2019b):

- The technology for making Men’s and Women’s Razors and Blades has now become quite intricate, based as it is on *three* fields: metallurgy, chemistry, and electronics, which, in turn, raises the *cost* of production,
- Gillette has been pursuing a strategy of *innovation* and constant improvement, offering new features—and benefits—than ever before, which has consequently made it possible for it to charge *premium* prices.
- Gillette’s virtual *monopoly* of the industry is another factor, that has enabled it to position itself in the *premium* and *super-premium* segments: rather than the *mid-price* segment.
- Many men—and women--consider shaving an important part of *personal grooming*, for which they are willing to pay *premium* prices: because they regard it an “affordable luxury.”

17. Results in Ten Markets Support Hypothesis I

In *ten* of the fifteen studies—that *exclude* Men’s and Women’s Razor-Blades, Ground Coffee, and Toilet Paper—the market leader was found to be a member of the *mid-price* segment, as we have hypothesized. Those market leaders are:

(1) Edge Men’s Shaving Gel, (2) Bud Light Lager Beer, (3) Pantene Shampoo, (4) Kraft Grated/Shredded Cheese, (5) Tropicana Refrigerated Orange Juice, (6) Crest Toothpaste, (7) Campbell Chicken Broth, and Chicken Noodle Soup, (8) Lay’s Potato Chips, (9) Energizer Alkaline AA Battery, and (10) Kleenex Facial Tissue.

One important exception to these results is the *Ground Coffee* market. The *market leader*, Folgers, and the *runner-up* Maxwell House, were *both* members of the *economy* segment, although Folgers’ unit price was *higher* than that of Maxwell House, as we have hypothesized (Datta, 2020c).

This is truly an *astonishing* result! In all ten studies mentioned above, *not* a single market leader—or

even the runner-up—competed in the *economy* segment.

This implies that both Folgers and Maxwell House were following the *cost leadership* strategy based on *lower* price, rather than better quality, and treated coffee as a *commodity* to gain market share. So, it is not unreasonable to conjecture that such a strategy is not likely to have been very profitable (Datta, 2020c).

18. Results in Seven Markets Support Hypothesis II

In *three* of the ten markets mentioned above, the results did *not* support Hypothesis II.

In the Chicken Noodle Soup market, the *runner-up* Progresso, was a member of the *premium* segment. Similarly, in the Facial Tissue market, the *runner-up* Puffs, was a member of the *premium* segment. But this was because of Puffs' demonstrably *higher* quality.

In the Shampoo market, the *runner-up*, Head & Shoulders was a member of the *mid-price*. Yet, its price was *higher* than that of the *market leader*, Pantene. However, this result did *not* negate Hypothesis II, because it was due to the fact that the former was a *specialty* shampoo, which always sells at a *higher* price.

Nevertheless, in *seven* markets the *runner-up* brands, like the market leaders, were members of the *mid-price* segment with a price tag that was *lower* than that of the market leader.

19. Strategic Groups in the U.S. Toilet Paper Market, 2008

We found *four* strategic groups in this market. Their 2008 market shares (Note 17) are as follows:

1. Procter & Gamble—*Market Leader*
 - Charmin—24.1%
 - Charmin Basic—2.2%
 - Charmin Plus—1%
 - Charmin Ultra Scents—0%
2. Kimberly Clark—*Runner-up*
 - (Kleenex) Cottonelle—14.1%
 - Scott 1000—12.4%
 - Scott Extra Soft—4.6%
3. Georgia Pacific
 - Quilted Northern—12.8%
 - Angel Soft—10.3%
4. Private Brands (*collectively*)—15.8%

19.1 Procter & Gamble (P&G) Corporation

P&G is an American corporation that is one of the world's *leading* consumer product companies.

For 2022 P&G has reported net sales of \$80.2 Billion (Note 18).

19.2 Kimberly-Clark Corporation

Kimberly-Clark is an American multinational corporation, that produces mostly personal-care *paper-based* consumer products: among others, facial tissue, feminine hygiene products, toilet paper, and disposable diapers (Note 19).

In 2022 it celebrated its 150th anniversary (Note 20).

The company's net sales for 2022 were \$20.2 Billion (Note 20).

19.3 Georgia Pacific

Georgia-Pacific is part of Koch Industries' group of companies. In 2005 it was acquired by Koch Industries. Koch's estimated annual revenues have exceeded \$125 billion (Note 21).

19.4 Private Brands

Private brands are those made exclusively for individual *retailers*, e.g., a supermarket, or a drug store.

20. Adverse Environmental Effect of Paper Products

According to Google, paper products--such as toilet paper, paper towels, and facial tissues--are *cheap* and *convenient*. However, they *cost* the environment a great deal. The vast majority of these products are made from *wood pulp*. And this drives the *degradation* of forests around the world (Note 22).

A *Treehugger.com* blog poses the question: "Which is Greener: Toilet Paper, or a Bidet?"

In trying to address this question, the blog says that most tissue-grade paper is made from *sawdust* and leftover *scraps* of timber cut for *other* purposes. This timber comes from pulpwood forests (Note 23).

Pulpwood farms grow on land where "native forests used to stand, and their relentless *monoculture* *disrupts* all manner of *wildlife* habitat" (Note 23, *italics* added).

While, it would be better if we used much *less* paper, but virgin toilet tissue *doesn't* necessarily equal the destruction of virgin forest (Note 23, *italics* added).

20.1 It's All About Water

Arguing in favor of *bidets*, the blog suggests that bidets are *good* for the environment: "*because they save water*. A lot of it" (Note 23, *italics* in the original).

Paper-making is highly *water-intensive*. The *effluent* from production of paper usually finds its way back into the environment: a flood of organic waste, and chemical residue that must be processed, or absorbed, after being treated and *dumped* into a river or ocean (Note 23).

The blog offers three *Earth-friendly* alternatives to address this problem:

- Use a *bidet*. To be most effective, dry with a *washcloth*.
- Use *recycled* toilet tissue.
- If you prefer conventional toilet paper, buy the *largest* roll because it uses less packing.

21. Conclusion

The path to market share leadership does *not* lie in *cost leadership* strategy: a path that is grounded in a *price that is lower* than that of the competition, as Michael Porter has suggested. Rather, a business in

pursuit of market-share leadership should try to serve the *middle* class by competing in the *mid-price* segment; and offering quality *superior* to that of the competition: at a somewhat *higher* price to connote an image of quality, and to ensure that the strategy is both profitable and sustainable in the long run. The *middle* class is the socio-economic segment that represents about 40% of households in America.

Quality, however, is a complex concept that consumers generally find difficult to understand. So, they often employ *relative* price and a brand's *reputation* as a symbol of quality.

For 2008 the total U.S. retail sales of the Toilet Paper market were \$4,117 million (Table 1). By far the *most* popular pack size was the 12-roll pack, which constituted 38% of total sales. So, we have focused cluster analysis on this size.

We tested two hypotheses. (I) That the market-share leader would be a member of the *mid-price* segment, and (II) That the market-share leader would carry a price tag that is *higher* than that of the nearest competition.

For *both* 2008 and 2007, the results did *not* support Hypothesis I. This is because *both* Charmin, the market leader, and (Kleenex) Cottonelle, the runner-up, were found to be members of the *premium* segment.

Toilet activity is quite complex, in which personal *hygiene* plays a critical role. Although a *bidet* is quite popular in Europe, very few people in America use it. So, in the absence of a substitute, Americans are willing to pay *premium* prices for toilet paper, because it serves an *important* need: an *antidote* to germs and disease.

Nevertheless, the data supported Hypothesis II, because the unit price of Charmin was *higher* than that of (Kleenex) Cottonelle.

We also found that *relative* price was a strategic variable, as we have hypothesized.

A *pattern* is emerging in price-quality segmentation analysis. In *ten* of the fourteen studies—that exclude Men's and Women's Razor-Blades, Ground Coffee, and Toilet Paper—the results *supported* Hypothesis I: that the *market leader* was going to be to be a member of the *mid-price* segment.

Also, results in *seven* markets supported Hypothesis II: that the *runner-up* was also going to be a member of the *mid-price* segment, and that its price was going to be *lower* than that of the market leader.

We discovered *four* strategic groups in the industry.

Finally, paper products--such as toilet paper, paper towels, and facial tissues--are *cheap* and *convenient*. However, they *cost* the environment a great deal.

There are three *Earth*-friendly alternatives to the use of Toilet Paper:

- Use a *bidet*. To be most effective, dry with a *washcloth*.
- Use *recycled* toilet tissue.
- If you prefer conventional toilet paper, buy the *largest* roll because it uses less packing.

Table 1. Hierarchical Cluster Analysis: The U.S. Toilet Paper Market, 2008

PQ Segment	Brand Names	Upr.	ClusCtr.	MSh.%	MSh%	Sales \$M	Sales \$M
				12-Roll	Brand	12-Roll	Brand
Super Premium	CHARMIN PLUS	\$10.56	\$10.42	0.1%	1.0%	\$0.9	\$39.2
	SEVENTH GENERATION	\$10.27		0.3%	0.2%	\$4.6	\$8.4
Premium	CHARMIN (market leader)	\$7.87	\$7.33	21.7%	24.1%	\$334.7	\$992.9
	SCOTT 1000	\$7.84		0.1%	12.4%	\$1.0	\$510.1
	SCOTT EXTRA SOFT	\$7.46		6.9%	4.6%	\$107.2	\$187.8
	CHARMIN ULTRA SCENTS	\$7.19		0.0%	0.0%	\$0.1	\$0.3
	COTTONELLE (runner-up)	\$7.05		20.2%	14.1%	\$312.6	\$582.5
	QUILTED NORTHERN	\$6.98		16.7%	12.8%	\$257.3	\$526.4
	NATURAL VALUE	\$6.93		0.0%	0.0%	\$0.1	\$0.4
Mid-Price	GREEN FOREST	\$6.27	\$5.90	0.2%	0.1%	\$2.6	\$4.9
	EARTH FIRST	\$6.15		0.0%	0.0%	\$0.3	\$0.4
	MD	\$6.05		0.6%	0.3%	\$8.5	\$14.0
	CHARMIN BASIC	\$5.76		4.3%	2.2%	\$66.3	\$90.5
	PRIVATE BRANDS (collectively)	\$5.74		16.5%	15.8%	\$255.5	\$650.9
	MARCAL	\$5.73		0.6%	0.9%	\$8.8	\$36.8
	ANGEL SOFT	\$5.63		11.1%	10.3%	\$171.9	\$422.5
Economy	BEST VALUE	\$5.10	\$4.96	0.0%	0.0%	\$0.1	\$0.4
	SOFPAC BY MARCAL	\$4.95		0.2%	0.2%	\$3.8	\$9.3
	COLORTEX	\$4.82		0.0%	0.0%	\$0.3	\$0.6
Ultra Economy	SOFT 'N GENTLE	\$3.73	\$3.15	0.4%	0.5%	\$6.9	\$20.7
	JUBILEE	\$3.17		0.0%	0.0%	\$0.2	\$1.3
	VELVET	\$2.54		0.0%	0.0%	\$0.1	\$1.6
Total (22 Brands)				100.0%	99.6%	\$1,543.9	\$4,101.6
Total All Brands					100.0%	37.5%	\$4,117.0

Table 2. Percentage of Promotional Sales to Total Sales: U.S. Toilet Paper Market, 2008

Brand Name	PQ Segment	Promo %	Promotional Intensity	Brand MkSh%
MARCAL	Mid-price	65.2%	Very Heavy	0.9%
KLEENEX COTTONELLE	Premium	52.9%	Heavy	14.1%
CHARMIN BASIC	Mid-price	52.4%		2.2%
MD	Mid-price	52.0%		0.3%
SCOTT EXTRA SOFT	Premium	50.0%		4.6%
QUILTED NORTHERN	Premium	49.2%		12.8%
SCOTT 1000	Premium	48.1%		12.4%
CHARMIN	Premium	45.5%		24.1%
SOFT 'N GENTLE	Ultra Economy	45.0%		0.5%
ANGEL SOFT	Mid-price	43.6%		10.3%
JUBILEE	Ultra Economy	35.5%	Moderate	0.0%
PRIVATE BRANDS	Mid-price	35.2%		15.8%
SOFPAC BY MARCAL	Economy	34.6%		0.2%
COLORTEX	Economy	33.7%		0.0%
CHARMIN ULTRA SCENTS	Premium	31.7%		0.0%
BEST VALUE	Economy	31.0%		0.0%
EARTH FIRST	Mid-price	22.3%	Low	0.0%
SEVENTH GENERATION	Super Premium	20.3%		0.2%
VELVET	Ultra Economy	18.1%		0.0%
GREEN FOREST	Mid-Price	12.9%	Very Low	0.1%
CHARMIN PLUS	Super Premium	6.9%		1.0%
NATURAL VALUE	Premium	4.9%		0.0%
Total (22 Brands)		45.6%		99.6%
	Total All Brands			100.0%

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Notes

Note 1. Profit Impact of Market Strategies.

Note 2. <https://www.nationalgeographic.com/history/article/what-people-do-before-toilet-paper>

Note 3. <https://www.sunrisespecialty.com/what-people-use-before-toilet-paper>

Note 4.

https://www.google.com/search?q=in+which+countries+squatting+is+a+common+practice+for+toilet&rlz=1C1RXQR_enUS1053US1053&oq=in+which+countries+squatting+is+a+common+practice+for+toilet&aqs=chrome.69i57j33i160l3.502282436j0j15&sourceid=chrome&ie=UTF-8

Note 5. <https://www.thefunctionalbody.com/why-squatting-to-poop-is-a-must/>

Note 6. Countries That Do and Don't Use Toilet Paper | The Restroom Kit

Note 7. Toilet Paper History: How America Convinced the World to Wipe | Mental Floss

Note 8. What People Used Before Toilet Paper Existed | Reader's Digest (rd.com)

Note 9. <https://www.charmin.com/en-us/about-us>

Note 10.

https://www.google.com/search?q=when+did+kimberly+clark+introduce+cottonelle+toilwt+paper&rlz=1C1RXQR_enUS1053US1053&oq=when+did+kimberly+clark+introduce+cottonelle+toilwt+paper&aqs=chrome.69i57j33i10i160j33i10i299l2.713830920j0j15&sourceid=chrome&ie=UTF-8

Note 11.

https://www.google.com/search?q=how+many+toilet+paper+brands+georgia+pacific+has&sca_esv=554523056&rlz=1C1RXQR_enUS1053US1053&sxsrf=AB5stBhaA4VeyN6KyfgO84beQ79G3pzB7w%3A1691439525523&ei=pVHRZMnHH4XbwkPnbqOA&ved=0ahUKEwiJrs-gr8uAAxWFbTABHR2cGcQ4dUDCBA&uact=5&oq=how+many+toilet+paper+brands+georgia+pacific+has&gs_lp=Egxnd3Mtd2l6LXNlnAimGhvdYBtYW55IHRvaWxldCBwYXBldiBicmFuZHMgZ2VvcmdpYSBwYWNpZmljIGhhczIFECEY0AFI488CUJ4OWIevAnADeAGQAQSYAbMCoAH0WaoBCTMzLjY2LjQuMbgBA8gBAPgBAagCFMICChAAGEcY1gQYsAPCAGcQIxiwAhgnwgIHECMY6gIYJ8ICFhAAGAMYjwEY6gIYtAIYjAMY5QLYAQHCAhYQLhgDGI8BGOoCGLQCGIwDGOUC2AEBwgIHECMYigUYJ8ICBBAjGCfCAggQABiKBRiRAsICERAuGIAEGLEDGIMBGMcBGNEWwGLEAAyGAYsQMYgwHCAgcQABiKBRhDwgIFEC4YgATCAggQABiKBRixA8ICBRAAGIAEwgIKEAAyGAYYFBiHAsICDxAAGIAEGBQYhwIYRhj7AcICChAAGIAEGEYY-wHCAggQABiKBRiGA8ICBhAAGBYYHsICBRAhGJIDwgIFECEYqWLCAGgQIRgWGB4YHcICBRAAGKIE4gMEGAAgQYgGAZAGCLoGBggBEAEYCw&scient=gws-wiz-serp

Note 12.

https://www.google.com/search?q=when+did+Koch+Industries+acquire+georgia+Pacific&rlz=1C1RXQR_enUS10719682j0j15&sourceid=chrome&ie=UTF-8

Note 13. This data is from food stores with sales of over \$2 million, and drug stores over \$ 1 million; it also includes discount stores, such as Target and K-Mart, but *excludes* Wal-Mart as well as warehouse clubs, e.g., Sam's Club, Costco, and BJ's. It also does not include the "dollar" stores, such as Dollar

General, and others.

Note 14. For those stores for which, during a week, there were feature ads, coupon ads, display, or temporary price decrease of at least 5%.

Note 15. The six classes are: “The Poor”, “The Near Poor”, “Traditional Middle Class”, “The Upper-Middle Class”, “The Very Rich/The Rich”, and “The Mega Rich—Masters of the Universe”.

Note 16.

https://www.google.com/search?q=why+are+facial+tissues+more+hygienic+than+handkerchiefs&rlz=1C1RXQR_enUS1053US1053&oq=why+are+facial+tissues+more+hygienic+than+handkerchiefs&aqs=chrome.69i57j0i54615.78043436j0j15&sourceid=chrome&ie=UTF-8

Note 17. This market share data comes from Table 1.

Note 18. <https://us.pg.com/annualreport2022/>

Note 19. <https://en.wikipedia.org/wiki/Kimberly-Clark>

Note 20. KMB 2022 FORM 10K (kimberly-clark.com)

Note 21. <https://www.gp.com/>

Note 22.

https://www.google.com/search?q=Google%3A+how+environmentally+is+the+making+of+facial+tissues&sca_esv=552538154&rlz=1C1RXQR_enUS1053US1053&sxsrf=AB5stBilAx92LG1vnOPeshMDzSe9lrQRuw%3A1690833589700&ei=RLIZNirKtz8wbkP_rqCsAw&ved=0ahUKEwiY2vP73bmAAxVcfjABHX6dAMYQ4dUDCBA&uact=5&oq=Google%3A+how+environmentally+is+the+making+of+facial+tissues&gs_l=egxnd3Mtd2l6LXNlcnAiO0dwb2dsZTogaG93IGVudmlyb25tZW50YWxseSBpcyB0aGUgbWFraW5nIG9mIGZlY2lhbCB0aXNzdWVzSABQAFgAcAB4AZABAJgBAKABAKoBALgBA8gBAPgBAeIDBBgAIEE&sclient=gws-wiz-serp

<https://tenrandomfacts.com/facial-tissue/>

Note 23. <https://www.treehugger.com/which-is-greener-toilet-paper-or-a-bidet-4863723>