Hand Soap Feasibility Study

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Introduction

Money management can become a crucial thing to students pursuing a college education. One item that may affect students’ budget is hand soap. A good soap brand consists of a reasonable cost, adequate cleaning ability, long-lasting capabilities, and popularity over other brands. Our group conducted a study composed of four tests to help college students choose the best brand of hand soap. We evaluated four brands of soap, including: DG Body (generic), Softsoap, Dial, and Bath and Body Works. In the first test, we reviewed the price of the soap. In the second test, we investigated how well the soap can clean. We assessed how long the soap lasted in the third test and in the final test, we took a survey of the preferred brand of soap. To declare a winner, we used a point system for each test. According to our point system, the sub-winner received four points, second place received three points, third place received two points, and the last place received one point. After conducting these four tests and adding up the points, we determined the winning soap with the most points.
Overview of the Options and Criteria

We were able to locate all four of these soaps at the Golden Triangle mall in Denton or in various stores near the college campuses of University of North Texas and Texas Woman’s University. We chose these soaps because they are some of the soaps that are most commonly seen on store shelves. The criteria chosen for this report were based off of common characteristics that college students may look for in hand soap. The tests included: how much each bottle cost (price per ounce), how long each bottle of soap lasted, how well each soap cleaned, and how many randomly-selected students preferred one brand over another (a general survey). These tests combined were used to determine the all-around best soap.*

*Note: The tests we conducted are not absolute. We conducted these tests through subjective measures (by availability, convenience, etc.). No actual scientific research was used. Our definition of the “best soap” is solely based off of our group tests.
Test 1: Cost (price per ounce)

In order to determine the price per ounce of each brand, we simply divide the price of each bottle of soap by their respective volumes as labeled.

DG Body (Generic):
\[ \frac{\$1.00}{7.5 \text{ oz}} = 13.3 \text{¢ per ounce} \]

SoftSoap:
\[ \frac{\$1.59}{7.5 \text{ oz}} = 21.2 \text{¢ per ounce} \]

Dial:
\[ \frac{\$1.99}{7.5 \text{ oz}} = 26.5 \text{¢ per ounce} \]

Bath and Body Works:
\[ \frac{\$5.50}{8.75 \text{ oz}} = 62.9 \text{¢ per ounce} \]

Table 1: Cost Results

<table>
<thead>
<tr>
<th></th>
<th>Generic</th>
<th>SoftSoap</th>
<th>Dial</th>
<th>Bath and Body Works</th>
</tr>
</thead>
<tbody>
<tr>
<td>Points</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
Test 2: Number of Pumps

To determine exactly how many washes one can get out of each bottle of soap, we counted each full pump of soap until the bottle was empty. This experiment includes the number of pumps used in the cleanliness experiment. Figure 1 shows the bowl we used to count the number of pumps for each soap.

![Figure 1. A bowl of all handsoaps combined.](image)

DG Body (Generic): 157 pumps

SoftSoap: 162 pumps

Dial: 111 pumps

Bath and Body Works: 209 pumps

Table 2: Results for Number of Pumps

<table>
<thead>
<tr>
<th></th>
<th>Generic</th>
<th>SoftSoap</th>
<th>Dial</th>
<th>Bath and Body Works</th>
</tr>
</thead>
<tbody>
<tr>
<td>Points</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>
Test 3: Cleanliness

In order to test the effectiveness of each soaps' respective cleaning abilities in a non-subjective manner, we set up an experiment in which the brand of soap is the only changed variable. We ran four trials, one for each individual brand. Each trial was done using the same person, the same grime, and the same washing technique. The hands are covered in a mixture of lasagna, barbeque sauce, and syrup. Once the hands are sufficiently messy, they receive one pump of soap. They then rub their hands together three times and rinse for three seconds. We repeat the process until palms are completely clean, and rate the soaps based off of how many total washes it took to entirely clean the grime off of the hands. Figures 2 and 3 show our view of dirty hands versus clean hands.

DG Body (Generic): 5 washes

*SoftSoap: 3 washes

*Dial: 3 washes

Bath and Body Works: 4 washes

*The tie between SoftSoap® and Dial® was broken by observing how much of the hand outside of just the palms was cleaned. Because the fingers were cleaner after using Dial®, it was declared the winner.

Table 3: Cleanliness Results

<table>
<thead>
<tr>
<th></th>
<th>Generic</th>
<th>SoftSoap</th>
<th>Dial</th>
<th>Bath and Body Works</th>
</tr>
</thead>
<tbody>
<tr>
<td>Points</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>
Test 4: Survey of Brands

We surveyed a total of 40 people and asked this question: “Which brand of soap do you prefer: DG Body (and/or another generic brand), SoftSoap, Dial, or Bath and Body Works?” Each person was allowed only one choice. After tallying the results (see Reference A), we determined the places and assigned their corresponding points. Table 4 shows the results:

Table 4: Survey Results

<table>
<thead>
<tr>
<th>Points</th>
<th>Generic</th>
<th>SoftSoap</th>
<th>Dial</th>
<th>Bath and Body Works</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

According to this test, more college students preferred Bath and Body Works over the other brands.
Conclusion

Table 5 below summarizes the ranking point-system we used for the tests. The points are ranked 1 to 4; 1 being the worst and 4 being the best. We added all the points together in order to determine which soap would be the winner.

Table 5: Summary of All Data

<table>
<thead>
<tr>
<th>Types of Soap</th>
<th>Cost</th>
<th>Lasts</th>
<th>Cleans</th>
<th>Survey</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dial</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>9 points</td>
</tr>
<tr>
<td>SoftSoap:</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>12 points</td>
</tr>
<tr>
<td>Bath and Body Works:</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>11 points</td>
</tr>
<tr>
<td>Generic:</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>8 points</td>
</tr>
</tbody>
</table>

Feasibility Study
**Recommendation**

In our opinion, the best soap is SoftSoap. This soap placed second for every test. This means it has a decent price, lasts a fair amount of time, cleans adequately, and stands out as a well-known brand.
Reference A: Feasibility Information

DG Body (Generic)

COST – 4 POINTS!!!
$1 for 7.5 oz – 13.3 cents per ounce

HOW WELL IT CLEANES – 1 POINT!
4 times

HOW LONG SOAP LASTS – 2 POINTS!
157 pumps

*SURVEY* – 1 POINT!
2 votes

TOTAL: 8 points

Softsoap

COST – 3 POINTS!
$1.59 for 7.5 oz – 21.2 cents per ounce

HOW WELL IT CLEANES – 3 POINTS!
3 times

HOW LONG SOAP LASTS – 3 POINTS!
162 pumps

*SURVEY* – 3 POINTS!
11 votes

TOTAL: 12 points

Dial

COST – 2 POINTS!
$1.99 for 7.5 oz – 26.5 cents per ounce

HOW WELL IT CLEANES – 4 POINTS!!!
3 times – cleaned more of the hands

HOW LONG SOAP LASTS – 1 POINT!
111 pumps

*SURVEY* – 2 POINTS!
10 votes

TOTAL: 9 points

Bath and Body Works (Peach Bellini)

COST – 1 POINT!
$5.50 for 8.75 oz – 62.9 cents per ounce

HOW WELL IT CLEANES – 2 POINTS!
4 times – smells better

HOW LONG SOAP LASTS – 4 POINTS!!!
209 pumps

*SURVEY* – 4 POINTS!!!
17 votes

TOTAL: 11 points

Winner line-up!

1st place – SoftSoap

2nd place – Bath and Body Works

3rd place – Dial

4th place – DG Body (generic)