

Development and Acceptability of Papaya Body Scrub

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Abstract— In the Eastern world, a century long tradition exists whereby a light complexion is regarded as equivalent to youth and beauty. Therefore, development of preparations for bleaching or to safely achieve overall whitening is one of the challenges for cosmetic industry influencing other countries including the Philippines as well. This is why, in recent years, the interest in skin whitening has grown tremendously.

Nowadays, skin whitening products are on the rage in the market. While glutathione is gaining more and more popularity, a lot of people still go for products with papaya extracts because it is rich in papain. An enzyme that is good for exfoliating dead skin cells

This study focused on the development and acceptability of papaya body scrub since it is a good source of papain extract that whitens and exfoliate skin. In addition, papaya has always been abundant and readily available in the country, thus, makes it easier to collect for use.

This study was anchored on several theories. One theory that would best support this research paper was the Production theory and the Theory of Inventive Problem Solving with a goal of establishing desired characteristics and gathering proof about the level acceptability of papaya body scrub from the respondents composed of 45 randomly selected individuals to assess the product; hence, the relationship among variables was determined, described, and further analyzed.

With respect to color, it was in the record that the papaya body scrub was assessed by TLE teachers with a weighted mean of 4.60 interpreted as extremely acceptable. Respondents including spa staff assessed it with a weighted mean of 4.28 interpreted as extremely acceptable while entrepreneurs assessed it with a weighted mean of 4.68 also interpreted as extremely acceptable.

In terms of texture, the papaya body scrub was assessed by TLE teachers, spa staff and housewives with an average computed mean of 4.65, 4.36 and 4.76 interpreted as extremely acceptable.

In terms of appearance, TLE teachers assessed the papaya body scrub with an average mean of 4.64, interpreted as extremely acceptable. Spa staff assessed it with an average mean of 4.44 interpreted as extremely acceptable.

Furthermore, housewives evaluate the product with an average mean of 4.79 also interpreted as extremely acceptable.

Relative to aroma, it was assessed with the three groups of respondents with an average computed mean of 4.69, 4.45 and 4.69 respectively interpreted as extremely acceptable.

As to exfoliating property, it was in the record that the papaya body scrub was assessed by TLE teachers with a weighted mean of 4.75 interpreted as extremely acceptable. Respondents including spa staff assessed it with a weighted mean of 4.75 interpreted as extremely acceptable while entrepreneurs assessed it with a weighted mean of 4.75 also interpreted as extremely acceptable.

Results show that there was significant difference on the ratings of the TLE teachers, spa staff, and housewives on the acceptability of the papaya body scrub in terms of texture, appearance, and color.

However, it was found that TLE teachers, spa staff, and housewives gave similar ratings on the aroma and exfoliating property of the papaya scrub.

Index Terms— Development and Acceptability of Papaya Body Scrub, Exfoliating property, Papaya Extracts, Skin Whitening Product,

1 INTRODUCTION

As one of the tropical countries in Asia, Philippines grow many plants abundantly. They can grow naturally on areas where resources are available and favorable.

It is known that Papaya is one among the many varieties of plants found growing in the country. Papaya (*Carica papaya* Linn.), originated from tropical America and is considered as one of most important fruit crops in the Philippines because of its great economic potential.

Christopher Columbus dubbed papaya “The Fruit of the Angels” after discovering its luscious taste, soft butter-like consistency and rich texture. Papaya is popular all over the world and for good reason.

Fruits and vegetables are known as protective foods as they provide essential vitamins; minerals and fibre required for maintaining good health.

With the discovery of the presence of phytochemicals in the fruits and vegetables and their strong antioxidant potential in scavenging free radical has generated tremendous attention of

the scientists [1].

This tropical fruit is rich in vitamins A, C, E and K, and has antioxidant properties. It also contains magnesium, potassium, niacin, carotene, protein, fiber and an enzyme called papain that provides many health advantages and benefits.

In addition, papaya has several components that are great for your skin.

This is why this fruit enzymes are found in many cosmetic, beauty and hair care products.

One of the most effective beauty benefits of papaya is lightening of your skin complexion. It contains natural bleaching properties. In addition, its cleansing properties help clear the skin of impurities. The vitamin C in it also helps protect skin cells against sun damage.

Nowadays, skin whitening products are on the rage in the market. While glutathione is gaining more and more popularity, a lot of people still go for products with papaya extracts because it is rich in papain. An enzyme that is good for exfoliating dead skin cells.

There are so many inventions and products that can be made through papaya and using in the development a body scrub is the researcher's best help in order to reveal its essence and usefulness.

2 OBJECTIVES

This study focused on the development and acceptability of papaya body scrub since it is a good source of papain extract that whitens and exfoliate skin. In addition, papaya has always been abundant and readily available in the country, thus, makes it easier to collect for use.

Moreover, this research aims to develop, produce and evaluate Papaya body scrub. It aims to attain the following specific objectives:

1. Determine the level of acceptability of papaya body scrub as rated by the respondents in terms Color, Texture, Appearance, Aroma and Exfoliating Property

2. Find the significant difference between the assessments made by the groups of respondents on acceptability of Papaya Body Scrub.

3 METHODOLOGY

The researcher used the experimental method of research to determine the acceptability and effectiveness of Papaya body scrub in terms of the properties mentioned above. And since the nature of the study involves development, construction and interpretation of detailed information, the researcher believes that this method is the most appropriate to be used as a basis for assessment and evaluation of Papaya body scrub.

The instrument used in the study was a survey questionnaire-checklist. The questionnaire is a research-made instrument devised to determine the acceptability and effectiveness of papaya body scrub.

4 LITERATURE REVIEW

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In the group of cysteine protease, papain family accounts the largest of it all. Papain may be obtained from bacteria, plant, vertebrates and invertebrates. Commercial papain

available in the market is a plant derived preparation coming from the latex of papaya. Papain or cysteine protease hydrolyase was first extracted from crude dried latex of papaya [2]. The term papain was first introduced by [3] in describing the proteolytic principle in papaya latex. Proteolytic enzyme is a group of enzymes capable of hydrolyzing the peptide bond in a protein molecule [4]. Papain consists of a single polypeptide chain with three disulfide bridges and sulfhydryl group necessary for activity of the enzyme. The molecular weight of papain is 23,406 Da and its optimum pH for maximum activity is around 6.0 to 7.0. It will digest most protein substrate more extensively than the pancreatic proteases. Papain exhibits broad specificity, cleaving peptide bonds of basic amino acids, leucine or glycine. It also hydrolyzes esters and amino acids (IUBMB Enzyme Nomenclature, 2009).

Antihelmintic activity of papaya seed has been predominantly attributed to carpaine (an alkaloid) and carpamine (later identified as benzyl thiourea). Carpaine has an intensely bitter taste and a strong depressant action on health. It is present not only in papaya fruit and seed but also in its leaves. Benzylisothiocyanate (BITC),

As mentioned by [5], the main bioactive compound in C. papaya seeds has been shown to be responsible for the anti-fertility effect [5].

Another important property to consider in this research is the product's color because the respondents and interested client will be attracted first on the color rather than other properties.

Color (American English) or colour (Commonwealth English) is the visual perceptual property corresponding in humans to the categories called red, blue, yellow, etc. Color derives from the spectrum of light (distribution of light power versus wavelength) interacting in the eye with the spectral sensitivities of the light receptors.

In addition, [6] states that color categories and physical specifications of color are also associated with objects or materials based on their physical properties such as light absorption, reflection, or emission spectra. By defining a color space colors can be identified numerically by their coordinates. Because perception of color stems from the varying spectral sensitivity of different types of cone cells in the retina to different parts of the spectrum, colors may be defined and quantified by the degree to which they stimulate these cells.

Furthermore, color changes may release or expose hidden messages which can be used for promotional or marketing purposes. Color changes can visually signal the consumer when the food is "done" just right and safe to eat or that the food is still in the process of being cooked. Color changes can be used to communicate optically with a cooking instrument telling the cooking instrument the level of doneness through a bar code change.

Another property to be considered in this research is the texture since it gives the client a good feel on the skin which eventually attracts them to use and try the product.

Texture from touch refers to the processing of information about surface material and micro geometry obtained from tactile exploration. Through textural information can be obtained both visually and auditory, touch yields much finer and more complex textural information than do the other sensory modalities.

Texture is presented at the somatosensory periphery in the spatiotemporal pattern of activity in populations of receptors embedded in the skin and in cortex by different populations of neurons in different response properties [7].

The above literature on texture is relevant with the present study because the product can be appealing to the consumers if it has an acceptable texture.

Another important property to consider in this undertaking is the product's appearance since it will give the client impression about the product.

While appearance codes can often be helpful in outlining proper dress and grooming for employees, they are often vague and lacking in acknowledgement of cultural diversity. Employees feel left in the dark, and immigrants new to U.S. feel confused or offended at the lack of sensitivity to their habit and values [8].

[9], defined appearance is the act of emerging arriving or coming into existence the way somebody looked or seemed to the outward aspect of it that created particular compressions.

Another important property to be considered in the study is the aroma or smell because a product with a good smell indicates freshness.

Smell is one of the oldest human faculties, yet it was one of the last to be understood by scientist. It was not until the early 1990s that biologists first described the inner workings of olfactory receptors- the chemical sensors in our noses- in a discovery that won a Nobel Prize. Since then, the plot has thickened. Over the last decade or so, scientist have discovered that odor receptors are not solely confined to the nose, but found throughout the body- in the liver, the heart, the kidney and even sperm-where they play a pivotal role in a host of physiological functions [10].

The above literature is necessary because the present study because aroma plays an important part to influence clients to use the product since aroma gives them the idea that the product is fresh and good to use.

Another important property to be considered in this research is the exfoliating property of the product since prospective clients are interested to whiten skin color and exfoliate skin using the product. Since the product contains papain which whitens the skin and papaya seeds which serve as

the scrub, exfoliating effect from papaya body scrub can be expected.

According to [11] exfoliation involves the removal of the oldest dead skin cells on the skin's outermost surface. Exfoliation is involved in the process of all facials, during microdermabrasion or chemical peels. Exfoliation can be achieved through mechanical or chemical means.

He also mentioned different mechanical exfoliants which include microfiber cloths, adhesive exfoliation sheets, micro-bead facial scrubs, crepe paper, crushed apricot kernel or almond shells, sugar or salt crystals, pumice, and abrasive materials such as sponges, loofahs, brushes, and simply fingernails. Facial scrubs are available in over-the-counter products for application by the user. People with dry skin should avoid exfoliants which include a significant portion of pumice, or crushed volcanic rock. Pumice is considered a good material to exfoliate the skin of the feet. Microdermabrasion is another mechanical method of exfoliation.

The stated literature is important to the present study because exfoliating property of the product will dictate of its effectiveness.

Another important literature is the understanding of different properties of the product. Since the respondents will assess and evaluate the product according to its properties, the researcher included literature pertaining to properties.

According to [12] property, is an abstract, is what belongs to or with something, whether as an attribute or as a component of a thing. In the context of this article, it is one or more components of someone or something. (rather than attributes), whether physical or incorporeal, of a person's estate; or so belonging to, as in being owned by, a person or jointly a group of people or a legal entity like a corporation or even a society.

The finding above are beneficial for the researcher in the conduct of this research since they impart necessary information for basis in using these components as ingredients in the development of papaya body scrub.

5 DISCUSSION

Level of Acceptability of Papaya Scrub

Table 1.1. Level of Acceptability of Papaya Body Scrub in Terms of Color

Indicators	TLE Teachers			Spa Staff			Housewives		
	WM	S.D.	V. I.	WM	S.D.	V. I.	WM	S.D.	V. I.
1. The finished product achieves the desired color.	4.60	0.490	EA	4.40	0.490	EA	4.73	0.442	EA

2. It has an appealing color that catches the interest of the consumer.	4.60	0.490	EA	4.33	0.699	EA	4.60	0.490	EA
3. The color attracts the consumer to use the product.	4.60	0.490	EA	4.47	0.618	EA	4.67	0.471	EA
4. The color gives consumer an expectation of softness of the product.	4.33	0.699	EA	3.87	0.806	A	4.53	0.618	EA
5. The color looks good to the eye.	4.87	0.340	EA	4.33	0.789	EA	4.87	0.340	EA
Overall Mean	4.60	EA		4.28	EA		4.68	EA	

Legend:

- 4.20 – 5.00 *Extremely Acceptable (EA)*
- 3.40 – 4.19 *Acceptable (A)*
- 2.60 – 3.39 *Moderately Acceptable (MA)*
- 1.80 – 2.59 *Fairly Acceptable (FA)*
- 1.00 – 1.78 *Poorly Acceptable (PA)*

Results from Table 1.1 shows that papaya body scrub is extremely acceptable as the finished product achieves the desired color based on the ratings of the TLE teachers (WM=4.60, SD =0.490), spa staff (WM=4.40, SD =0.490), and housewives (WM=4.73, SD =0.442). It has an appealing color that catches the interest of the consumer based on the ratings of the TLE teachers (WM=4.60, SD =0.490), spa staff (WM=4.33, SD =0.699), and housewives (WM=4.60, SD =0.490). The color attracts the consumer to use the product based on the ratings of the TLE teachers (WM=4.60, SD =0.490), spa staff (WM=4.47, SD =0.618), and housewives (WM=4.67, SD =0.471). The color gives consumer an expectation of soft-

ness of the product based on the ratings of the TLE teachers (WM=4.33, SD =0.699), spa staff (WM=3.87, SD =0.806), and housewives (WM=4.53, SD =0.618). The color looks good to the eye based on the ratings of the TLE teachers (WM=4.87, SD =0.340), spa staff (WM=4.33, SD =0.789), and housewives (WM=4.87, SD =0.340).

The overall means indicate that the papaya body scrub has extremely acceptable color based on the ratings of the TLE teachers, spa staff, and housewives. This mean that the papaya body scrub has a soothing and relaxing color that is appealing to the eye of the consumers. The color also catches the interest of the users because of its desirable appeal.

Tantamount to the statement of [13], agreed that many variables affect color preferences. Singh also said that color preferences change with age. In general, adults prefer the color blue, followed by red and green, and young children prefer red and yellow. White and black were consistently disliked.

Table 1.2. Level of Acceptability of Papaya Body Scrub in Terms of Texture

Indicators	TLE Teachers			Spa Staff			Housewives		
	WM	S.D.	V. I.	WM	S.D.	V. I.	WM	S.D.	V. I.
1. The finished product feels good to the skin when applied.	4.60	0.490	EA	4.27	0.573	EA	4.80	0.400	EA
2. The combination of different ingredients makes a good quality.	4.53	0.499	EA	4.27	0.573	EA	4.60	0.490	EA
3. It has the appropriate texture of a body scrub.	4.60	0.490	EA	4.20	0.748	EA	4.80	0.400	EA
4. The granules made from papaya seeds make the skin feels clean.	4.67	0.471	EA	4.33	0.699	EA	4.67	0.471	EA
5. The product has a granulated texture.	4.87	0.340	EA	4.73	0.442	EA	4.93	0.249	EA
Overall Mean	4.65	EA		4.36	EA		4.76	EA	

Legend:

- 4.20 – 5.00 *Extremely Acceptable (EA)*
- 3.40 – 4.19 *Acceptable (A)*
- 2.60 – 3.39 *Moderately Acceptable (MA)*
- 1.80 – 2.59 *Fairly Acceptable (FA)*
- 1.00 – 1.78 *Poorly Acceptable (PA)*

Results from Table 1.2 shows that papaya body scrub is extremely acceptable as it feels good when applied to the skin based on the ratings of the TLE teachers (WM=4.60, SD =0.490), spa staff (WM=4.27, SD =0.573), and housewives (WM=4.80, SD =0.400).

The combination of the different ingredients of the papaya body scrub is extremely acceptable as it makes a good quality based on the ratings of the TLE teachers (WM=4.53, SD =0.499), spa staff (WM=4.27, SD =0.573), and housewives (WM=4.60, SD =0.490).

The overall means indicate that the papaya body scrub has extremely acceptable texture based on the ratings of the TLE teachers, spa staff, and housewives.

The papaya body scrub has appropriate granulated texture that feels good when applied to the skin.

As elaborately explained by [14], texture from touch refers to the processing of information about surface material and micro geometry obtained from tactile exploration. Through textural information can be obtained both visually and auditory, touch yields much finer and more complex textural information than do the other sensory modalities.

Humans can distinguish textures whose elements differ in size by hundreds of nanometers. When we run our fingers across a surface, we may perceive the surface as being rough, like sandpaper, or smooth, like glass; the surface may also vary among other sensory continua, such as hardness (e.g., stone) vs. softness (e.g., moist sponge), stickiness (e.g., tape) vs. slipperiness (e.g., soap). Also, whether a texture is thermally isolating (e.g., leather) or thermally conductive (like metal) contributes to the textural percept. Tactile texture perception plays a role in the tactile recognition of objects as most natural objects differ not only in the shape but in texture as well.

Furthermore, certain types of texture information are essential in order to properly manipulate objects.

Table 1.3. Level of Acceptability of Papaya Body Scrub in Terms of Appearance

Indicators	TLE Teachers			Spa Staff			Housewives		
	WM	S.D.	V. I.	WM	S.D.	V. I.	WM	S.D.	V. I.
1. The papaya scrub is presented neatly and attractively.	4.87	0.340	EA	4.67	0.596	EA	4.93	0.249	EA
2. The finished product looks free and safe from foreign ingredients.	4.60	0.712	EA	4.60	0.712	EA	4.93	0.249	EA
3. The finished product achieved the desired appearance.	4.60	0.490	EA	4.27	0.680	EA	4.67	0.471	EA
4. It has an over	4.53	0.499	EA	4.13	0.618	A	4.67	0.471	EA

all look that pleases the eyes of the consumers.									
5. The finished product is properly packed.	4.60	0.712	EA	4.53	0.718	EA	4.73	0.573	EA
Overall Mean	4.64		EA	4.44		EA	4.79		EA

Legend:

- 4.20 – 5.00 Extremely Acceptable (EA)
- 3.40 – 4.19 Acceptable (A)
- 2.60 – 3.39 Moderately Acceptable (MA)
- 1.80 – 2.59 Fairly Acceptable (FA)
- 1.00 – 1.78 Poorly Acceptable (PA)

Results from Table 1.3 shows that papaya body scrub is extremely acceptable as presented neatly and attractively based on the ratings of the TLE teachers (WM=4.8 7, SD =0.340), spa staff (WM=4.67, SD =0.595), and housewives (WM=4.93, SD =0.249). The finished product looks free and safe from foreign ingredients based on the ratings of the TLE teachers (WM=4.60, SD =0.712), spa staff (WM=4.60, SD =0.712), and housewives (WM=4.93, SD =0.249). The finished product achieved the desired appearance based on the ratings of the TLE teachers (WM=4.60, SD =0.490), spa staff (WM=4.27, SD =0.680), and housewives (WM=4.67, SD =0.471). The product has an overall look that pleases the eyes of the consumers based on the ratings of the TLE teachers (WM=4.53, SD =0.499), spa staff (WM=4.13, SD =0.618), and housewives (WM=4.67, SD =0.471). The finished product is properly packed based on the ratings of the TLE teachers (WM=4.60, SD =0.712), spa staff (WM=4.53, SD =0.718), and housewives (WM=4.73, SD =0.573).

The overall means indicate that the papaya body scrub has extremely acceptable appearance based on the ratings of the TLE teachers, spa staff, and housewives.

This mean that the papaya body scrub looks clean and appealing to the eye of the consumers. The packaging also adds to the pleasant look of the product which makes it more desirable to use. Connected to the statements given by [15] they stated that product appearance has an effect on both consumer attention and product categorization. The authors define attention as “the momentary focusing of information processing capacity on a particular stimulus”. Stimulus characteristics which induce responses from consumers include color, size, motion, novelty, and use of complex stimuli.

Table 1.4. Level of Acceptability of Papaya Body Scrub in Terms of Aroma

Indicators	TLE Teachers			Spa Staff			Housewives		
	WM	S.D.	V.	WM	S.D.	V.	WM	S.D.	V.

			I.			I.			I.
1. It shows an acceptable pleasant smell.	4.60	0.490	EA	4.33	0.596	EA	4.60	0.490	EA
2. The aroma of the finished product is relaxing.	4.67	0.471	EA	4.47	0.718	EA	4.67	0.471	EA
3. It has a scent comparable to commercially sold product in the market.	4.67	0.471	EA	4.33	0.699	EA	4.67	0.471	EA
4. The aroma has the capacity to induce arousal to consumer.	4.67	0.471	EA	4.67	0.471	EA	4.67	0.471	EA
5. The product has a distinct smell making it interesting to use.	4.87	0.340	EA	4.47	0.718	EA	4.87	0.340	EA
Overall Mean	4.69	EA	4.45	EA	4.69	EA			

Legend:

- 4.20 – 5.00 *Extremely Acceptable (EA)*
- 3.40 – 4.19 *Acceptable (A)*
- 2.60 – 3.39 *Moderately Acceptable (MA)*
- 1.80 – 2.59 *Fairly Acceptable (FA)*
- 1.00 – 1.78 *Poorly Acceptable (PA)*

Results from Table 1.4 show that papaya body scrub is extremely acceptable as it shows an acceptable pleasant smell based on the ratings of the TLE teachers (WM=4.60, SD =0.490), spa staff (WM=4.33, SD =0.596), and housewives (WM=4.60, SD =0.490). The aroma of the finished product is relaxing based on the ratings of the TLE teachers (WM=4.67, SD =0.471), spa staff (WM=4.47, SD =0.718), and housewives (WM=4.67, SD =0.471). It has a scent comparable to commercially sold product in the market based on the ratings of the TLE teachers (WM=4.67, SD =0.471), spa staff (WM=4.33, SD =0.699), and housewives (WM=4.67, SD =0.471). The aroma has the capacity to induce arousal to consumer based on the ratings of the TLE teachers (WM=4.67, SD =0.471), spa staff (WM=4.67, SD =0.471), and housewives (WM=4.67, SD =0.471). The product has a distinct smell making it interesting to use based on the ratings of the TLE teachers (WM=4.87, SD =0.340), spa staff (WM=4.47, SD =0.718), and housewives (WM=4.87, SD =0.340).

The overall means indicate that the papaya body scrub has extremely acceptable aroma based on the ratings of the TLE teachers, spa staff, and housewives.

This mean that the papaya body scrub has distinct

aroma that is interesting to the consumers. The aroma also makes the consumers feel relaxed and stress free.

Over the last decade or so, scientist have discovered that odor receptors are not solely confined to the nose, but found throughout the body- in the liver, the heart, the kidney and even sperm-where they play a pivotal role in a host of physiological functions [10].

Table 1.5. Level of Acceptability of Papaya Body Scrub in Terms of Exfoliating Property

Indicators	TLE Teachers			Spa Staff			Housewives		
	WM	S.D.	V. I.	WM	S.D.	V. I.	WM	S.D.	V. I.
1. Proven safe and whitens the skin.	4.60	0.490	EA	4.60	0.490	EA	4.60	0.490	EA
2. The skin feels clean and fresh.	4.67	0.471	EA	4.67	0.471	EA	4.67	0.471	EA
3. Removes dry skin after use.	4.73	0.442	EA	4.73	0.442	EA	4.73	0.442	EA
4. The skin feels supple and soft after use.	4.87	0.340	EA	4.87	0.340	EA	4.87	0.340	EA
5. The product brightens skin complexion.	4.87	0.340	EA	4.87	0.340	EA	4.87	0.340	EA
Overall Mean	4.75	EA	4.75	EA	4.75	EA	4.75	EA	EA

Legend:

- 4.20 – 5.00 *Extremely Acceptable (EA)*
- 3.40 – 4.19 *Acceptable (A)*
- 2.60 – 3.39 *Moderately Acceptable (MA)*
- 1.80 – 2.59 *Fairly Acceptable (FA)*
- 1.00 – 1.78 *Poorly Acceptable (PA)*

Results from Table 1.5 show that papaya body scrub is extremely acceptable as it is proven safe and whitens the skin based on the ratings of the TLE teachers (WM=4.60, SD =0.490), spa staff (WM=4.60, SD =0.490), and housewives (WM=4.60, SD =0.490).

The skin feels clean and fresh based on the ratings of the TLE teachers (WM=4.73, SD =0.471), spa staff (WM=4.67, SD =0.471), and housewives (WM=4.67, SD =0.471). Removes dry skin after use based on the ratings of the TLE teachers (WM=4.73, SD =0.442), and housewives (WM=4.73, SD =0.442). The skin feels supple and soft after use based on the ratings of the TLE teachers (WM=4.87, SD

=0.340), spa staff (WM=4.87, SD =0.340), and housewives (WM=4.87, SD =0.340). The product brightens skin complexion based on the ratings of the TLE teachers (WM=4.87, SD =0.340), spa staff (WM=4.87, SD =0.340), and housewives (WM=4.87, SD =0.340).

The overall means indicate that the papaya body scrub has extremely acceptable exfoliating property based on the ratings of the TLE teachers, spa staff, and housewives.

This mean that the papaya body scrub has the property to remove dry skin to make it more supple and smooth. The results also indicate that the papaya body scrub can brighten the skin complexion and makes skin feels clean and fresh.

Table 2. Significance on the Ratings on the Acceptability of Papaya Body Scrub i

Indicators	Weighted Mean			F-value	p-value	Analysis
	TLE Teachers	Spa Staff	Housewives			
Texture	4.65	4.36	4.76	8.475	0.000	<i>Significant</i>
Appearance	4.64	4.44	4.79	3.676	0.034	<i>Significant</i>
Color	4.60	4.28	4.68	4.667	0.015	<i>Significant</i>
Aroma	4.69	4.45	4.69	2.25	0.118	Not significant
Exfoliating property	4.75	4.75	4.75	0.000	1.00	Not significant

There's a significant difference on the rating of the acceptability of Papaya Scrub among the respondents because texture, color and appearance are not the same in terms of their properties and on how the consumers consider or standard in dealing with these three variables. Supported literatures have shown the difference between the three; texture is presented at the somatosensory periphery in the spatiotemporal pattern of activity in populations of receptors embedded in the skin and in cortex by different populations of neurons in different response properties [7]. While appearance codes can often be helpful in outlining proper dress and grooming for employees, they are often vague and lacking in acknowledgement of cultural diversity. Employees feel left in the dark, and immigrants new to U.S. feel confused or offended at the lack of sensitivity to their habit and values [16]. Consumers believe that some colors are alluring while others are repelling. However, the attractiveness of any color is subjective and a matter of opinion.

One consumer may find a color to be unattractive while the next consumer finds that same color to be very appealing. Marketers need to be aware that color preferences exist and that they are different among all types of people. Preferences for colors can change between genders, cultures, age groups, geographic locations and more. Each consumer is unique. Extended research has been done on color preferences.

The research shows that many variables affect color preferences, including gender, age, culture, and personality. In general, blue and green are preferred over yellow and red. Highly saturated colors are preferred, and there is also a preference for bright colors [17].

However, it was found that the TLE teachers, spa staff, and housewives gave similar ratings on the aroma and exfoliating property of the papaya scrub. This result validates the present study since the three groups of respondents find papaya body scrub as extremely acceptable based on its aroma, and exfoliating property.

As stated on the following statements; scents can influence consumer behavior by creating positive or negative emotions. Facial skin care products are one product category that uses scents as a way to persuade consumers to buy. According to [18] and [19], odors can evoke memories and therefore create either good or bad feelings in an individual. [18] adds that odors can also relieve stress. He continues that if a consumer is exposed to a certain scent while seeing an advertisement displaying an image of the similar odor, he or she is more likely to put more effort into processing product information and comparing different product alternatives within the specific product category in question. While exfoliation involves the removal of the oldest dead skin cells on the skin's outermost surface. Exfoliation is involved in the process of all facials, during microdermabrasion or chemical peels. Exfoliation can be achieved through mechanical or chemical means.

6 CONCLUSION

There is a significant difference on the ratings of the TLE teachers, spa staff, and housewives on the acceptability of the papaya scrub in terms of texture, appearance and color.

However, it was found that the TLE teachers, spa staff and housewives gave similar rating on the aroma and exfoliating property of the papaya scrub, thus, the hypothesis stating that there is no significant difference on the statement made by the three groups of respondents. Thus, the null hypothesis stating that there is no significant difference on the assessment made by the three groups of respondents is partially accepted.

7 RECOMMENDATION

Based on the drawn conclusions, these are highly recommended:

1. Based from the findings, families and consumers can try using the papaya body scrub as alternative to commercial body scrub products.
2. The product can be enhanced through advance research and study that would eventually lead to the improvement of its quality.
3. Trade of Industry approval should be considered to legally advertise the product.
4. Local government such as community organizations can use the papaya body scrub as profitable product for small business within the community.
5. Future studies can be done along this line considering herb-al components of other whitening products using the same ingredients.

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