Research Artifact 1: User Survey

Introduction

Skincare is an essential part of many people's daily routines, yet selecting the right products can be overwhelming due to ingredient concerns, adverse reactions, and misleading marketing. To understand consumer habits and challenges in skincare selection, we conducted a survey exploring how individuals choose products, the difficulties they encounter, and what solutions could improve their confidence in skincare decisions.

Methodology: The survey I made collected responses from 29 individuals with varying skincare routines and concerns. It included questions on product selection habits, ingredient awareness, common skin issues, past negative reactions, and desired solutions for safer skincare choices.

Key Findings

1. Frequency of Skincare Use

    ○ A majority of respondents (over 60%) reported using skincare products daily, while a smaller percentage used them rarely.
2. Methods of Product Selection

    ○ Online reviews and word-of-mouth were the most common sources for choosing skincare products.
    ○ Some respondents also relied on ingredient research and dermatologist recommendations.
3. Ingredient Awareness

    ○ While some consumers always check ingredient lists, many only do so occasionally.
    ○ A subset of respondents reported being unsure about specific ingredient risks.

4. Skin Concerns and Negative Reactions

   - Common concerns included acne, hyperpigmentation, and sensitivity.
   - Over half of respondents experienced negative reactions such as redness, irritation, and breakouts.
   - Some respondents expressed uncertainty about potential allergens in skincare products.

5. Challenges in Product Selection

   - Key concerns included the fear of using harmful products, high prices, and difficulty understanding ingredient effects.
   - Some respondents highlighted seasonal skin changes as an additional challenge.

6. Preferred Solutions

   - Many respondents indicated a need for tools that analyze ingredient safety.
   - Personalized skincare recommendations and dermatologist guidance were also highly requested.
   - A few respondents emphasized the importance of sustainability and ethical sourcing.

Insights and Implications

The findings suggest that while consumers are interested in making informed skincare choices, they face barriers such as ingredient complexity and fear of adverse reactions. Brands and skincare companies could improve consumer confidence by providing transparent ingredient breakdowns, dermatologist-backed recommendations, and AI-powered tools for personalized product selection. Additionally, integrating sustainability efforts could attract more conscious consumers.

Conclusion

The survey highlights the need for accessible, reliable resources to help consumers navigate the complexities of skincare. By addressing concerns related to safety, education, and personalization, the industry can foster better consumer trust and satisfaction. Further research could explore how technological solutions, such as mobile apps or AI-driven analysis, could simplify the decision-making process for skincare users.

Research Artifact 2: Researching articles or books written by medical professionals

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When designing a skincare recommendation app, it's essential to incorporate insights from dermatologists and skincare specialists. Key considerations include identifying common allergens, understanding ingredient interactions, and ensuring product recommendations are tailored to individual skin needs.

One major concern is the presence of food allergens in skincare products, especially for people with atopic dermatitis. Research by Ryczaj et al. (2023) found that many eczema treatments contain major food allergens, increasing the risk of sensitization when applied to inflamed skin. This highlights the need for dermatologists to carefully evaluate product formulations and reinforces the importance of an app that helps users avoid allergens.

Another issue is the misleading nature of "hypoallergenic" labels. A study by Hiranput et al. (2023) found that many so-called hypoallergenic products still contain common allergens, making it difficult for consumers to trust such claims. This emhasizes the need for an educational component in the app to guide users in choosing products based on ingredient safety rather than marketing terms.

Beyond allergen awareness, understanding how different ingredients interact is also crucial. Goh et al. (2024) emphasize the benefits of a structured skincare routine—cleansing, treatment, moisturization, and sun protection—for conditions like acne, rosacea, and atopic dermatitis. By incorporating these insights, the app can recommend well-balanced routines that enhance skincare effectiveness.

Technology also plays a key role in improving skincare recommendations. Research suggests that machine learning and deep learning can personalize product suggestions based on skin characteristics (Nithyadevi, 2024; Lin et al., 2022). Integrating these technologies into the app can help refine recommendations, ensuring users get products suited to their specific skin type, conditions, and potential allergies.

Ethical sourcing and ingredient transparency are becoming increasingly important. Ajayi et al. (2024) emphasize the need for sustainable and ethically sourced skincare ingredients, which not only benefit consumers but also promote environmental responsibility. By incorporating ethical considerations, the app can educate users on making conscious skincare choices.

A medically accurate skincare recommendation app should prioritize allergen awareness, ingredient interactions, personalized technology, and ethical sourcing. By integrating insights from dermatological research, the app can empower users to make safer, more informed skincare decisions.

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Artifact 3: Competitive Analysis and Ideation

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1. Overview of Competitors

- SkinSAFE

    - Description: SkinSAFE is an app that helps users identify safe skincare products based on their skin type, preferences, and ingredient sensitivities.

    - Features:

        - Ingredient transparency with a large database of products.

        - Ability to filter products by sensitivities (e.g., gluten, nuts, soy).

        - Barcode scanning for in-store purchases.

        - User reviews and ratings.

    - Strengths:

        - Comprehensive ingredient database.

        - Highly personalized product recommendations.

        - Convenient barcode scanning feature.

    - Weaknesses:

        - Limited educational content about skincare ingredients.

        - Some users report that the recommendations can be generic, lacking in depth.

- Think Dirty

- Description: Think Dirty is an app that allows users to scan and look up cosmetic product ingredients to see their toxicity and health implications.

- Features:

  - Product ratings based on toxicity and health concerns.

  - Ingredient breakdown with a "clean score."

  - A community-driven feature where users can rate products.

- Strengths:

  - Clear and easy-to-understand toxicity scores.

  - Focus on clean beauty with a focus on health and environmental impact.

- Weaknesses:

  - Limited focus on personalized skincare.

  - Lacks deep recommendations for alternative products.

  - The "toxicity" metric can be controversial and may not fully capture the nuances of ingredient safety.

- INCIDecoder

  - Description: INCIDecoder focuses on decoding the ingredients in skincare products and helping users understand their benefits and potential risks.

  - Features:

    - Detailed ingredient breakdown.

    - Ingredient ratings based on research and scientific evidence.

    - A large database of skincare products.

- ○ Strengths:

  - ■ Deep focus on ingredient transparency and education.

  - ■ Research-backed ratings for ingredients.

- ○ Weaknesses:

  - ■ Limited product recommendations—more focused on ingredient analysis.

  - ■ Can be overwhelming for users who are not familiar with skincare ingredients.

2. Market Gaps

- Personalization: Most existing apps do not offer personalized skincare routines based on specific skin conditions, goals, or detailed skin assessments. SkinSAFE provides some degree of personalization, but there's potential for deeper customization.

- Ingredient Transparency: While apps like SkinSAFE and Think Dirty provide ingredient transparency, the level of detail regarding ingredient sourcing, efficacy, and scientific research varies. A more comprehensive breakdown with accessible explanations could differentiate a new platform.

- User Experience: Many existing platforms have cluttered interfaces or limited educational content. User navigation and intuitive design are often lacking, particularly in apps like Think Dirty, where users may be confused about the toxicity scale.

- Community Integration: None of the apps heavily incorporate social or community-driven features like user-generated content around skin types, routines, or testimonials. This could improve user engagement and make apps feel more personalized.

3. What Competitors Do Well

- Ingredient Transparency: Platforms like INCIDecoder excel in breaking down the details of ingredients, educating users, and fostering trust.

- Health and Environmental Focus: Think Dirty focuses on clean beauty, appealing to eco-conscious and health-conscious consumers.

- Database and Variety: SkinSAFE has a wide range of products, covering different brands and ingredients, which is helpful for users seeking alternatives.

4. What Competitors Lack

- Deeper Personalization: There is an opportunity for more personalized skincare recommendations based on specific skin issues, goals, and lifestyle factors.

- Holistic Product Recommendations: Rather than just showing product ratings or ingredients, these platforms could benefit from giving users tailored suggestions for routines or how products interact with each other.

- Educational Content: While SkinSAFE and INCIDecoder offer ingredient explanations, there is a gap in educating users about how certain ingredients interact with specific skin types.

- User Engagement: Incorporating features like community reviews, skin diaries, or daily tracking could enhance the experience and make users feel more invested in their skincare journey.

5. Ideation

- Comprehensive Personalization: Build an AI-driven skincare recommendation engine that uses a combination of user-provided data (e.g., skin concerns, goals, sensitivities, age, etc.) and product analysis to generate a unique, daily skincare routine.

- Ingredient Education & Transparency: Create an educational module that not only explains each ingredient but also discusses how different ingredients interact with various skin types, helping users make more informed decisions.

- User-Friendly Interface: Focus on clean, minimal design that makes it easy for users to understand complex information. Interactive features like a "skin diary" could allow users to track their progress and refine their routines.

- Community Features: Introduce a community-driven aspect where users can share their experiences, routines, and results, allowing others to benefit from real-world testimonials.