

Synopsis

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1. Title

A Cross-Market Evaluation of Wide-Field Retinal Imaging Adoption: Clinician Perceptions and Anticipated Satisfaction with Remidio's Diagnostic Solutions

2. Introduction

In recent years, ophthalmic diagnostics has undergone significant transformation with the introduction and adoption of advanced imaging technologies. Among them, **Wide-field retinal imaging (WFI)** has emerged as a cornerstone innovation, particularly in the diagnosis and management of peripheral retinal diseases such as diabetic retinopathy, retinal detachment, vein occlusions, and uveitis. Traditional fundus imaging captures only a limited central field of 30 to 50 degrees, whereas WFI provides a panoramic view of the retina, often exceeding 100 to 200 degrees in a single capture. This extended coverage helps clinicians detect pathologies in the peripheral retina that may otherwise be missed, enabling earlier intervention and improved patient outcomes.

The integration of WFI into routine clinical practice is especially significant in the context of emerging markets. Countries in Asia and Africa face an increasing burden of non-communicable diseases, including diabetes and hypertension, which are primary risk factors for retinal complications. Despite the rising demand for comprehensive retinal diagnostics, healthcare systems in these regions often encounter challenges such as limited access to high-end imaging infrastructure, skilled workforce shortages, and budget constraints. Portable, cost-effective, and user-friendly solutions become paramount in such environments.

Remidio Innovative Solutions Pvt. Ltd., an Indian medical device company, has introduced a range of portable retinal imaging devices designed to democratize access to advanced diagnostics. The company's performance was benchmarked against industry leaders like Zeiss, Topcon, and Optos. Their **Rapid Wide-Field Imaging Device** targets ophthalmologists, while introducing a range of portable, easy-to-use, and cost-effective wide-field imaging devices tailored to the needs of Developing countries. These devices aim to bridge the gap between advanced retinal diagnostics and real-world affordability and usability.

This research, therefore, focuses on evaluating the real-world satisfaction and perception of ophthalmologists using Remidio's wide-field imaging devices. Conducted across

various countries and city tiers, this study analyzes how factors such as years of experience, type of clinical practice, and geographic setting influence product satisfaction. It also sheds light on the commercial and service-related expectations of healthcare professionals and identifies key opportunities for product and strategy optimization.

3. Background of the Problem

In many lower-income and emerging economies, healthcare providers face a dual challenge: a growing patient load with retinal conditions and limited access to premium imaging technologies. Although wide-field imaging holds tremendous potential, its adoption is constrained by high upfront costs, lack of digitized infrastructure, and insufficient technical support in smaller towns and rural areas. Moreover, a clear understanding of what end-users (ophthalmologists) value most—whether it's image quality, portability, service support, or affordability—is often missing. Without this insight, companies may miss critical alignment between their offerings and the actual needs of their target markets. Hence, this study seeks to address this gap by closely examining how Remidio's wide-field imaging devices are perceived and used in diverse real-world settings.

4. Research Questions

The study will address the following questions:

- What product features will be most valued across city tiers and clinician experience levels?
- How satisfied will clinicians likely be with Remidio's devices in terms of performance, usability, and commercial terms?
- What factors (clinical, operational, or financial) will most significantly influence adoption of WFI?

5. Objectives

The research will aim to:

- Assess anticipated perception, satisfaction, and practical value of Remidio's devices.
- Identify priority product features across user segments.
- Evaluate how clinical setting and user experience may affect expectations.
- Generate insights to support product development and strategic initiatives.

6. Hypothesis

Based on preliminary understanding, the hypotheses will be:

- H1: Experienced ophthalmologists in metros will emphasize technical aspects.
- H2: Doctors in Tier 2/3 cities will prioritize portability and ease of use.
- H3: Affordability and after-sales service will be critical across all segments.

7. Material and Methodology

This study adopts a **mixed-methods research design**, combining quantitative rankings with qualitative insights to provide a comprehensive understanding of clinician satisfaction with Remidio's wide-field retinal imaging devices. The methodology involved structured surveys and telephonic interviews with ophthalmologists currently using or familiar with the Remidio system. Respondents were selected from diverse regions, ensuring a representative sample from metro, semi-metro, Tier 2, and Tier 3 cities. The study incorporated both numerical rating scales (1 to 10 for importance and 1 to 5 for satisfaction) and open-ended questions to capture contextual feedback. The analysis focuses on cross-tabulating satisfaction scores with variables such as years of experience, type of practice, and geographic location to draw meaningful correlations.

8. Study Tools

To ensure consistency and comparability of data, a **standardized questionnaire** was used as the primary tool. This included both **Likert-scale ranking questions** to quantify perceptions and multiple-choice items for demographic profiling. The survey captured feedback on product-specific attributes like image quality, field of view, ease of use, portability, integration with EMR systems, and after-sales service. In addition, a set of questions explored commercial preferences such as pricing, warranty terms, financing options, and payback period. The structured format of the tool enabled aggregation and pattern analysis across different respondent segments.

9. Duration of Study

The study will span six weeks:

Week 1-2: Survey design, finalization of respondent list

Weeks 3-7: Data collection (surveys + interviews)

Weeks 8-9: Data analysis and validation

Week 10: Report writing and presentation of findings

10. Sample Size

The proposed sample size will be 100 ophthalmologists drawn from different regions in India. Though diverse sampling, the sample will be purposively selected to ensure diversity in specialization, experience level, and type of clinical setting. The respondents ranged from early-career doctors with under 5 years of experience to senior experts with over 15 years in the field, thereby offering a holistic view of the user spectrum. This focused group will provide deep insights into user perceptions and experiences.

11. Sampling Techniques

A **purposive sampling** approach was adopted for this study, targeting clinicians who have hands-on experience with Remidio's wide-field imaging devices. The intent was not to generalize to the entire population but to gather **in-depth, expert-driven insights**. Respondents were selected to ensure variation in terms of geography (metro vs. Tier 3), clinical specialization (retina vs. general), and institutional setup (standalone clinics vs. multi-specialty hospitals).

12. Data Collection Procedure

Data was collected through a combination of **structured online surveys** and **telephonic interviews**. The online survey was distributed via email and included clear instructions and confidentiality assurances. Follow-up calls were conducted to clarify responses and probe deeper into areas of interest. Responses were recorded, anonymized, and stored in a secure database. The final dataset was cleaned and prepared for statistical analysis using Excel and basic analytical software to identify trends and patterns.

13. Operational Definition

To maintain consistency, key terms were defined as follows:

- **Wide-Field Retinal Imaging (WFI):** Retinal imaging technology capturing more than 100° of the retina in a single frame.
- **Ease of Use:** Refers to how intuitive and user-friendly the device is in daily clinical workflows.
- **Portability:** The ability to transport and use the device across locations without significant setup.
- **Satisfaction:** The degree of clinician contentment based on product features, commercial value, and service quality, measured on a scale of 1 to 5.

- **City Tiers:** Classification of urban centers in India into Metro, Semi-Metro, Tier 2, and Tier 3 based on infrastructure, population, and economic activity.

14. Data Analysis Plan

The collected data was analyzed using **descriptive statistics** to calculate weighted averages, frequencies, and deviations across different parameters. Comparative analyses were performed by **cross-tabulating city tiers and years of experience** against satisfaction scores. Data visualization tools such as bar charts, spider graphs, and heatmaps were used to represent trends clearly. Inferences were drawn based on both numerical rankings and qualitative feedback to generate actionable insights.

15. Ethical Consideration

This research maintained high ethical standards throughout. **Informed consent** was obtained from all participants, and their responses were kept anonymous to protect privacy. Participation was entirely voluntary, and no personally identifiable data was recorded. Since no patient-related or clinical trial data was involved, the study did not require institutional review board (IRB) clearance, but ethical best practices were followed at every stage.

16. Implications of Research

The insights generated from this study offer significant implications for both **product development and market strategy**. For Remidio, the findings will inform **feature prioritization** (e.g., image quality for metros, portability for Tier 3), **customized messaging**, and **pricing strategies** tailored to different city tiers. It also highlights the importance of strengthening after-sales service, particularly in underpenetrated areas. On a broader scale, the study supports the notion that **accessible diagnostic technology** can play a vital role in improving eye care outcomes in emerging markets and underscores the need for **localization of innovation**.

17. Conclusion

This research will aim to bridge the gap between product innovation and clinical adoption of wide-field retinal imaging in diverse healthcare settings. By focusing on the end-user perspective, it will not only guide Remidio's product and business strategies but also support the broader vision of equitable eye care access through technology. With accurate, relevant, and actionable insights, this study is expected to be a stepping stone for scaling WFI implementation and improving ophthalmic outcomes in India and beyond.

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