

From Demo to Decision: How Clinical Demonstrations Influence Medical Device Purchase Outcomes in South India

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ABSTRACT

The procurement of medical devices focuses on acquiring technologies that improve patient diagnostics, treatment, and overall quality of life while also enhancing the cost-effectiveness of healthcare. The procurement process is comprehensive, covering everything from identifying needs to evaluating purchases after they are made, often requiring a balance between high, ongoing costs and the necessity for clinical innovation. Increasingly, outcomes are assessed through data registries that monitor clinical effectiveness and value. The primary objective of managing purchasing influences is to guarantee the adoption of devices that enhance patient care while maintaining financial sustainability for healthcare providers. Medical devices are technologies designed to interact with the human body to promote patient health. These gadgets can monitor, modify, and improve body functioning and anatomical components. They can function inside or outside the body, such as implanted pacemakers or wearable sensors. Ensuring the quality of medical equipment is critical for determining product safety and effectiveness. This comprises risk management, regulatory compliance, and continual process improvement. Thorough testing, detailed documentation, and global standard compliance are all critical components. Medical gadgets are used to prevent, diagnose, and cure illnesses and diseases, as well as aid in rehabilitation. This constitutes a detailed business strategy that outlines market entry sequencing, regulatory pathway selection, and technical documentation methods to expedite time-to-market, establish competitive barriers, and facilitate efficient global expansion for innovations in medical devices. Medical device manufacturers can boost market penetration and adoption results by investing in clear, high-quality demonstrations that are customized to local clinical needs. These results provide a strategic framework for integrating stakeholders in evidence-based procurement procedures and advance our understanding of consumer behavior in developing healthcare.

Key Words: Medical, Healthcare, Clinical demo, Healing

INTRODUCTION

The capacity of a technology to show better clinical results, safety, and efficiency through, for instance, live demonstrations or clinical trials, has become a primary—and even required—factor in adoption as health systems move toward buying according to value. For medical innovations to be effective, they must either lower healthcare costs or meet a medical need that is unmet. Adoption won't happen otherwise. It is crucial that the buyer and/or customer comprehend how a medical gadget innovation would either lower costs or improve treatment, ideally both. Businesses depend on efficient marketing methods to efficiently express this message. The Indian healthcare sector consists of hospitals, medical equipment, telemedicine, outsourced medical tourism, health insurance, and other related enterprises. Today, the healthcare sector leads all other industries in our country in terms of revenues and jobs. The need for medical equipment is anticipated to increase drastically as it seeks to satisfy the demands of the growing market. As a physician maintaining his own practice, the most recent medical technology may greatly improve productivity, efficiency, and procedures. Before making a purchase, a consumer must consider the following factors.

LITERATURE REVIEW

Hinrichs et al. (2013) this study defines the parties involved in the purchase of medical devices within the larger health-care delivery system and details the unique difficulties they face in promoting patient safety while making purchases. The results demonstrate that many decisions about the purchase of devices are made in isolation, which is not ideal for judgments needing knowledge that is currently dispersed across various individuals within various departments.

The issues raised call for a more comprehensive approach to medical device acquisition since they are related to the larger system of care and equipment management.

The results of a UK study on how people who buy interactive medical devices assess usability, the difficulties they encounter, and areas for development are presented by Vincent & Blandford (2017). Because infusion devices are utilized by a variety of healthcare providers, the study concentrated on their acquisition. Twenty different stakeholders that were either involved in or affected by the procurement of medical devices participated in a semi-structured interview research. It was discovered that, in theory, equipment usability may be taken into account while purchasing health services. In reality, choice was constrained by the availability of equipment on the market, engineering standards dominated the review process, and assessment of local needs did not allow for a serious assessment of usability.

According to Lingg et al. (2017), the study's objectives were to evaluate end users' perspectives on the acquisition of high-risk medical equipment, talk about the value of health technology assessments (HTAs) at the hospital level, and identify other possible areas where purchasing procedures could be improved. The study was conducted in Mexico from June to October of 2015. Material failure, medical device efficacy, outdated medical device technology, insufficient supply of implant and instrument sets, and delayed supply of implants and instruments were listed as the issues. According to the study's findings, Mexican purchasing process participants undervalue HTAs' influence while making judgments. Although HTA in Mexico has improved in recent years, further progress is still needed.

According to Deep et al. (2019), the world's population's safety is the first priority while developing new medical equipment for the diagnosis and treatment of various illnesses. Data from clinical studies are more transparent because to the clinical trials regulation. Clinical investigation requirements will be required, and if the evaluation is based on comparator devices, it will be necessary to show the device's clinical benefits and give a thorough equivalency test. A transparent clinical review, ideally centralized, and premarket evidence of clinical efficacy and safety via a randomized controlled trial should be mandated by the new European regulations.

The price variability of standardized medical items bought by Italian Public Buyers (PBs) is examined in Bucciol et al. (2020). Each device's marginal cost is recovered using a semi-parametric method. Average prices fluctuate significantly amongst PBs; we demonstrate that a PB fixed effect, which is linked to the institutional features and size of the PB, accounts for the majority of the discrepancy between purchase prices and anticipated costs. Similar findings are obtained by repeating the main estimation using device fixed effects. Lastly, an exogenous policy change—that is, the removal of the mandated reference price regime—is employed to evaluate the impact of discretion on medical device procurement in light of each PB's expertise.

According to Satilmiş & Mete (2022), there was no significant difference in the participants' scores based on their working hours at this institution. Furthermore, there was a substantial difference based on their marital status, but not on their work experience. Therefore, it can be advised that salespeople who work in this industry and wish to pursue a career in it should be specialists in their own subject so they can accurately explain their product and comprehend the needs of their customers.

Hinrichs-Krapels et al. (2022) will conduct a systematic assessment of scholarly literature to find research on any methods, procedures, or strategies for acquiring expensive medical equipment and devices in hospitals in high-income nations. To build the evidence base needed to impact medical equipment purchase policy and practice, emphasize the need for additional empirical work that assesses purchasing strategies or treatments and more detail in research reporting (e.g., equipment type, evaluation outcomes).

Value-based models are still underutilized in the acquisition of medical devices, according to Matinheikki et al. (2024), despite the unmatched significance of value in healthcare. Research is required to determine what variables encourage the use of ordinary, inexpensive devices rather than value-adding ones that may result in better overall health outcomes. Our findings highlight the challenge of minimizing information asymmetry when information is difficult for all decision-makers to understand and the necessity of aligning incentives in a setting where several intra- and inter-organizational agency linkages are at work. In general, the decisions made about the inter-organizational agency connection were heavily impacted by the intra-organizational agency aspects.

According to Naji et al. (2025), employees' intentions to use blockchain-based supply chain tracking are strongly influenced by perceived utility and optimism. By using the model in various contexts and combining several data sources, future studies can improve validity. Alnajim&Alkhalifah (2025) assess those variables affecting the use of IoT in hospitals. Filling these gaps is crucial to enhancing IoT application security, safeguarding data, and ensuring uninterrupted treatment among an increasingly interconnected healthcare ecosystem.

Because they provide innovative methods for sickness diagnosis, prevention, monitoring, and treatment, medical devices are crucial to modern healthcare (Tetty-Engmann et al., 2025). Finally, Caporalini et al. (2025) highlight the importance of green coatings for ecologic, next-generation healthcare solutions by examining their positive environmental impact as well as their potential for scalability and sustainability. Sampa et al. (2025) a user-friendly system by itself is insufficient without institutional support, training, and incentive.

OBJECTIVES OF THE STUDY

- i) To inspectin what way clinical demonstrations influence South Indian consumers' decisions to buy medical devices.
- ii) To evaluate the connection between clinical demonstrations and the results of medical device purchases.
- iii) To determine clinical demonstrations perceived risk in medical devices.

RESEARCH METHODOLOGY

The impact of clinical demonstrations on medical equipment purchase results in South India is explored using a descriptive and analytical research design. Exploring healthcare professionals' perspectives, experiences, and decision-making processes regarding medical device inspection and purchase is the study's main goal. Various states of South India like Karnataka, Kerala, Tamil Nadu, Telangana, and Andhra Pradesh.

ANALYSIS AND INTERPRETATION OF DATA

Table - 1: Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.851	39

Cronbach's Alphascore of 0.851 for 39 items, which authenticates high confidentiallogic, designates that it is dependable and applicable for auxiliary research.

Table - 2: Profession

Profession	Frequency	Percent
Medical practitioners (doctors and surgeons)	102	36.2
Biomedical engineers	66	23.4
Procurement officers	73	25.9
Hospital administrators	41	14.5
Total	282	100.0

The study surveyed a total of 282 participants, with the largest group being medical practitioners (36.2%), followed by procurement officers at 25.9%, biomedical engineers at 23.4%, and hospital administrators representing 14.5% of the total.

Table - 3: Clinical Demonstrations

Role of Clinical Demonstrations	Mean	Rank
Features and functions of medical devices	3.98	VI
Live demonstrations	4.08	V
Hands-on experience during demonstrations	3.67	VII
Effectiveness of the medical device	4.10	IV
Assess the usability and ease of operation of medical devices	3.78	VIII
Trust in the medical device	4.27	III
Clinical demonstration impacts my intention to purchase the device	4.31	II
Cost and value of medical devices	4.69	I

Findings disclose that economic contemplations, purchase target, and trust are the furthest precarious outcomes of scientific demos, while practical usability aspects receive relatively less emphasis.

Table - 4: Clinical Demonstrations and Purchase Outcomes

One-Sample Test						
	Test Value = 0					
	t	DF	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
R1	121.630	281	.000	4.652	4.58	4.73
R2	60.878	281	.000	4.067	3.94	4.20
R3	48.817	281	.000	3.596	3.45	3.74
R4	44.719	281	.000	3.489	3.34	3.64
R5	45.936	281	.000	3.638	3.48	3.79
R6	65.083	281	.000	4.156	4.03	4.28

R1 entitles the incontestably stimulus medical device purchase decision $t = 121.630$, R2 indicates the Decision-makers compare substitute medical devices, $t = 60.878$, R3 designates the Decrease reluctance in eventual procurement decisions $t = 48.817$, R4 shows the directly affects purchase outcomes $t = 44.719$, R5 specifies the Procurement committee discussions $t = 45.936$, R6 guides the Lead to optimistic acquisition products $t = 65.0830$.

Table - 5: Bayesian Correlation

Posterior Distribution Characterization for Pairwise Correlations ^a			
		Risk	Profession
Risk	Posterior	Mode	.002
		Mean	.002
		Variance	.003

	95% Credible Interval	Lower Bound		-.112
		Upper Bound		.116
N			282	282
Profession	Posterior	Mode	.002	
		Mean	.002	
		Variance	.003	
	95% Credible Interval	Lower Bound	-.112	
		Upper Bound	.116	
N			282	282

Risk perception seems to be quite constant among various professional groupings. This result suggests that risk perception is unaffected by one's professional experience, which lends credence to the idea that other variables may be more significant in influencing attitudes and choices around risk.

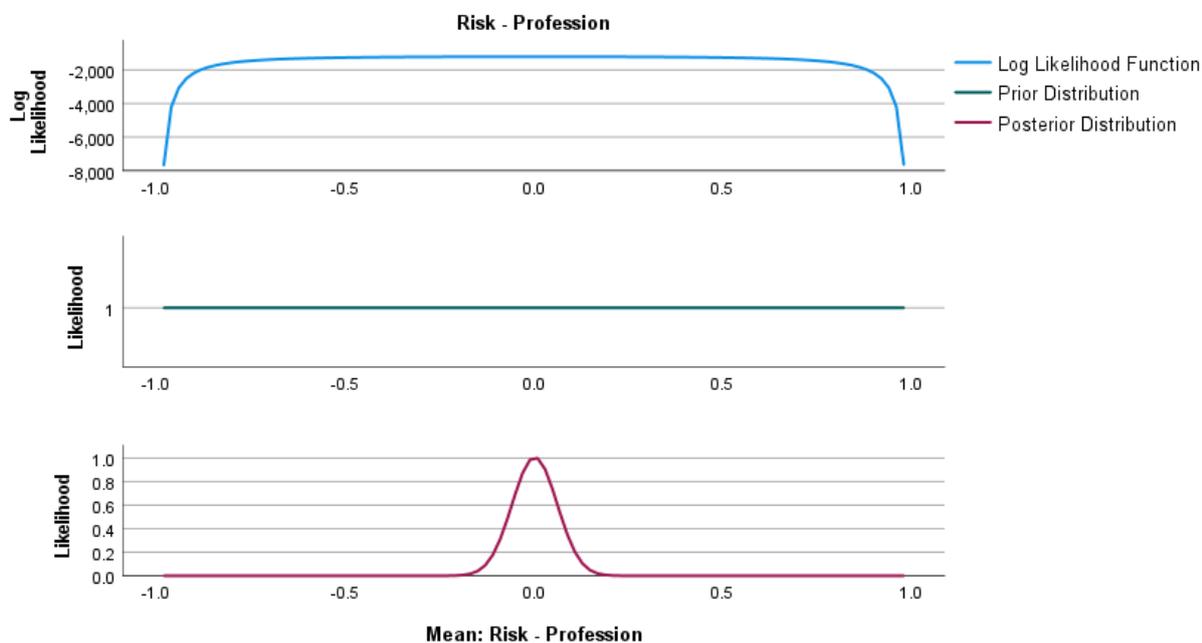


Figure - 1: Mean Risk

Table - 6: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.749
Bartlett's Test of Sphericity	Approx. Chi-square	1431.447
	DF	78
	Sig.	.000

A high degree of sample adequacy is indicated by the Kaiser-Meyer-Olkin (KMO) Measure of sample Adequacy of 0.749. A KMO number above 0.60 is considered acceptable, above 0.70 is considered good, and above 0.80 is considered very well, according to standard recommendations. As a result, the resultant value indicates that the sample size and variable correlations are adequate for component analysis. As a result, additional factor extraction and interpretation in this study can be done with confidence.

Table - 7: Communalities

Communalities		
	Initial	Extraction
Clinical Demonstrations	1.000	.424
Clinical Relevance	1.000	.328
Hands-on Experience	1.000	.589
Demonstrator Expertise	1.000	.540
Ease of Use (Usability)	1.000	.766
Clinical Effectiveness	1.000	.607
Safety Assurance	1.000	.193
Trust and Credibility	1.000	.592
Training and Knowledge Transfer	1.000	.747
Integration Compatibility	1.000	.645
Customization and Flexibility	1.000	.793
Post-Demonstration Support	1.000	.707
Cost-Value Justification	1.000	.576
Extraction Method: Principal Component Analysis.		

Table - 8: Total Variance Explained

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.962	30.473	30.473	3.962	30.473	30.473	3.872	29.782	29.782
2	2.316	17.818	48.292	2.316	17.818	48.292	2.288	17.601	47.383
3	1.228	9.449	57.741	1.228	9.449	57.741	1.347	10.358	57.741
Extraction Method: Principal Component Analysis.									

The adequacy of the factor solution is confirmed by the communality values, which show that the extracted components account for a significant amount of variance in the majority of variables. All things examined, the PCA results suggest that a significant number of variables are successfully integrated into the factor model and provide important insights into the key elements influencing medical device purchase decisions.

Table - 9: Rotated Component Matrix

Rotated Component Matrix^a			
	Component		
	1	2	3
Training and Knowledge Transfer	.856		
Customization and Flexibility	.849		
Post-Demonstration Support	.836		
Integration Compatibility	.785		
Trust and Credibility	.742		
Clinical Demonstrations	.644		
Ease of Use (Usability)		.866	
Clinical Effectiveness		.775	
Demonstrator Expertise		.699	
Clinical Relevance		.460	
Safety Assurance		.415	
Hands-on Experience			.737
Cost-Value Justification			.730
Extraction Method: Principal Component Analysis.			
Rotation Method: Varimax with Kaiser Normalization.			
a. Rotation converged in 4 iterations.			

With roughly a third of the variance, the first component is the most important. The rotating solution's more straightforward and balanced factor structure makes it easier to fully understand the dimensions underlying clinical presentation variables influencing medical equipment purchasing choices. Overall, the results validate the data's solid and accessible factor structure, indicating that further factor examination and deliberation are warranted.

CONCLUSION

A gadget must be compatible with the caregiver's and the care recipient's educational background, mental stability, physical and psychological capabilities, lifestyle, and surroundings. Health care providers often recommend personal equipment. However, a doctor might not take into account the best brand or type of a device for a particular patient in their home setting, or the doctor might not have the necessary skills to do so. Additionally, a doctor has little authority over the equipment that is given to a patient. Rather, the patient might depend on a provider of medical equipment, who might favor a certain brand or kind of equipment over others. The study also highlights how field demonstrations reduce the perceived risk of costly medical device purchases by facilitating informed conversations between physicians, biomedical engineers, and procuring teams. The results emphasize the necessity for makers of medical devices to create evidence-based, interactive, context-specific demos suitable for South Indian medical centers.

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