Editorial

Coating-Type Selection in Iranian Optical Retail: Socioeconomic Stratification, Online Purchasing, and a 10-Year Forecast

Mohammad Amin Khorraminejad[1], Lars Rickmann[1*], Masoud Khorrami-Nejad[2,3]

1- SRH University of Applied Sciences Heidelberg, Campus Hamm
2- Department of Optometry, School of Rehabilitation, Tehran University of Medical Sciences, Tehran, Iran.
3- Translational Ophthalmology Research Center, Farabi Eye Hospital, Tehran University of Medical Sciences, Tehran, Iran.

***Corresponding author:** Lars Rickmann, Ph.D
SRH University of Applied Sciences Heidelberg, Campus Hamm, German
Eamil: Lars.Rickmann@srh.de
***Disclosure*:** There is no financial interest for the authors in any methods or materials mentioned in this article

Orcid ID:
Mohammad Amin Khorraminejad**:** 0009-0006-0058-4431
Lars Rickmann: 0009-0003-5457-6099
Masoud Khorrami-Nejad: 0009-0003-5457-6099

Article info:
Received: 11 Feb 2026
Accepted: 17 Feb 2026

Citation: Khorraminejad MA, Rickmann L, Khorrami-Nejad M. Coating-Type Selection in Iranian Optical Retail: Socioeconomic Stratification, Online Purchasing, and a 10-Year Forecast. Journal of Modern Rehabilitation. 2026;20(3):?-?

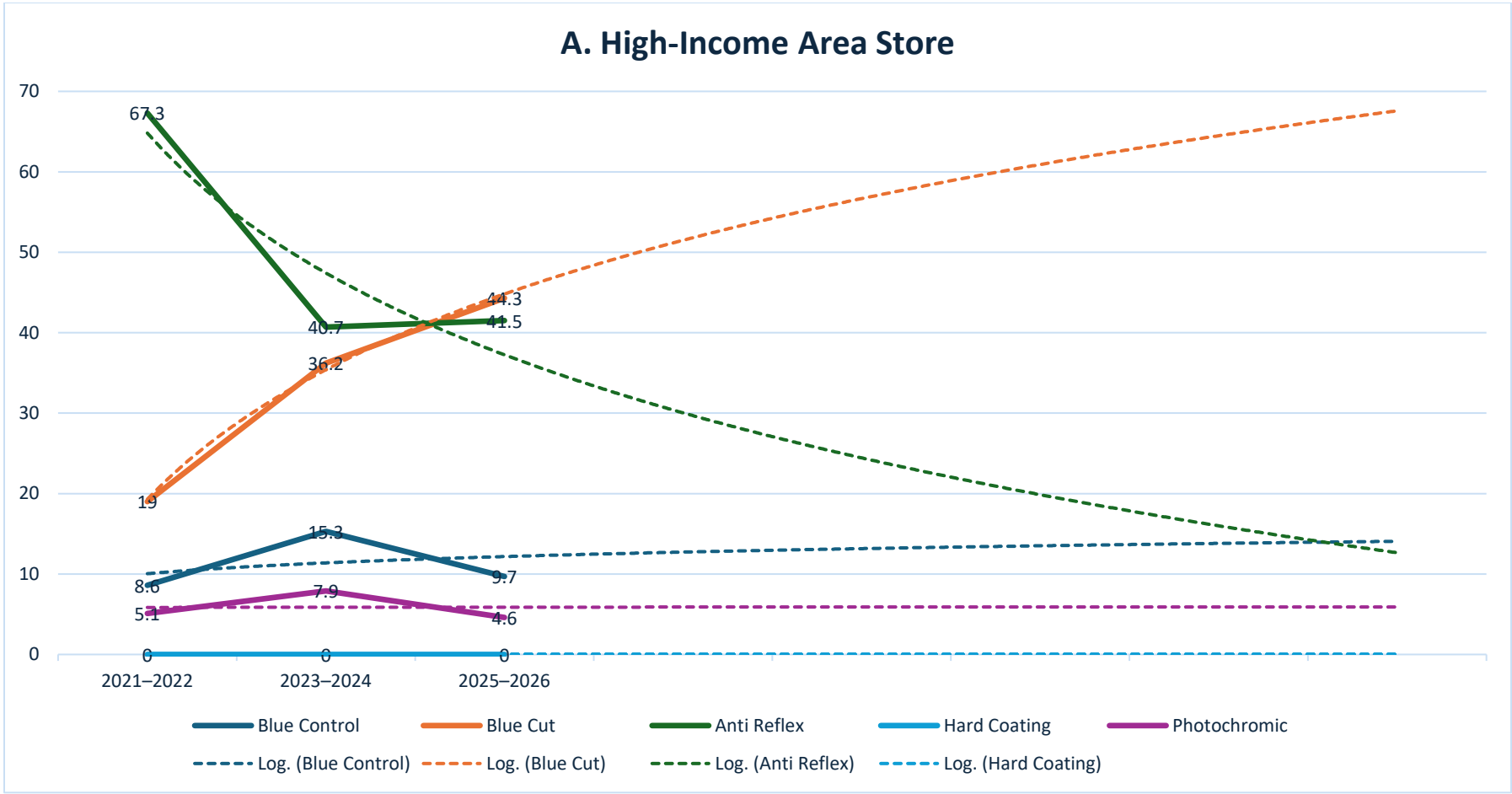
Running Title: Coating Selection in Iranian Optical Retail

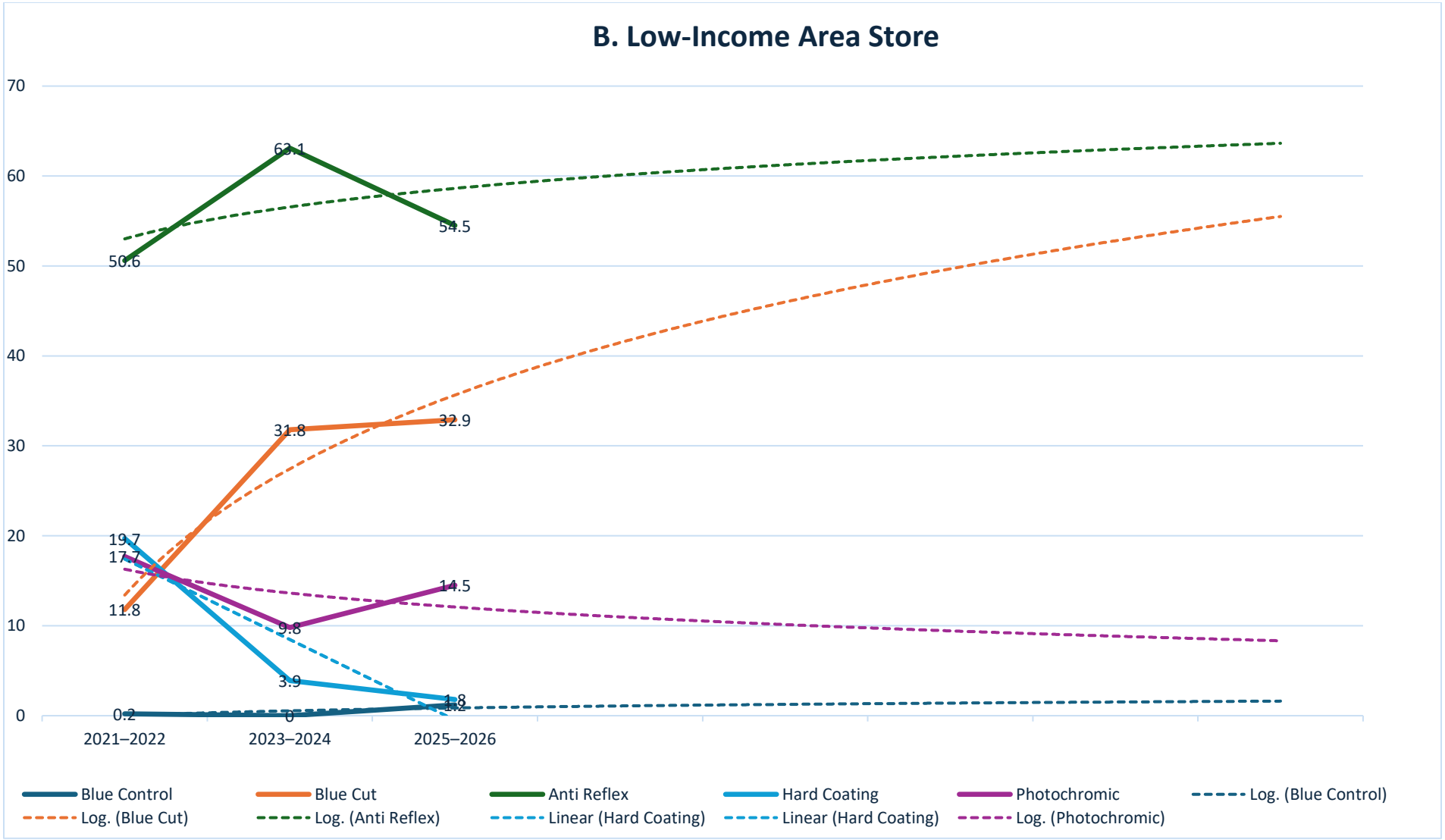
Abstract
Understanding how spectacle-lens coating types are distributed across retail channels is essential for anticipating demand and guiding inventory and service planning. In Iran, optical retail operates through distinct socioeconomic and purchasing channels, including high-income area stores, low-income area stores, and online shops, each associated with different levels of affordability and product

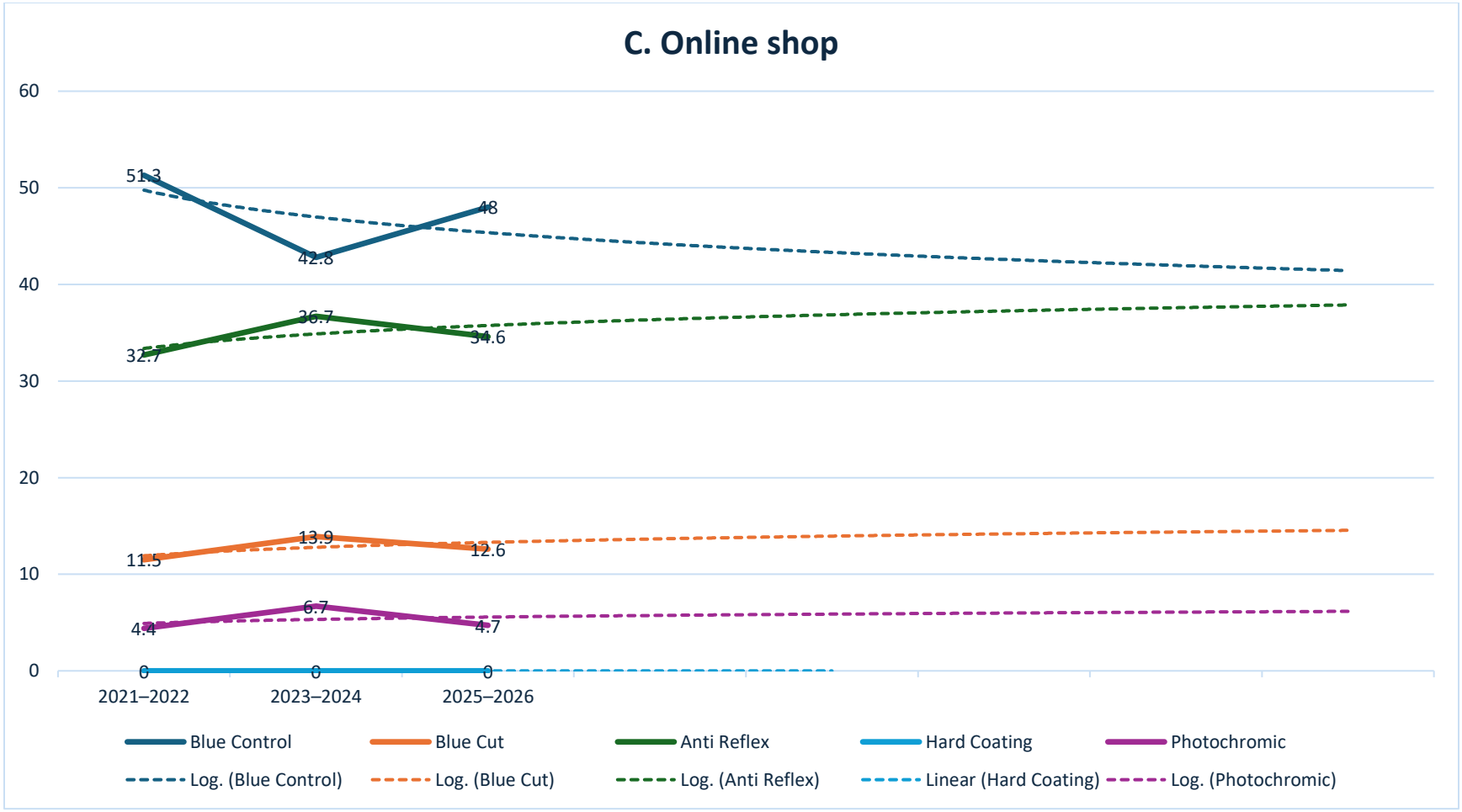
assortment. This editorial summarizes coating-type selection patterns across these segments and interprets observed time trends and 10-year logarithmic forecasts to outline plausible market evolution. Data from 4,615 ophthalmic lenses were analyzed, comprising 2,521 lenses from high-income area stores, 1,674 from low-income area stores, and 420 from online shops. Anti-reflex coatings constituted the dominant baseline option in physical retail settings, whereas Blue Cut lenses occupied a broadly accessible mid-tier position across income groups. In contrast, Blue Control lenses, representing a premium blue-light-filtering option, were minimally represented in low-income retail but accounted for nearly half of online sales, reflecting a strong affordability and channel-specific gradient. Photochromic lenses formed a smaller but persistent share across all segments. Hard coating (CR-39 without coating) was observed exclusively in low-income stores, consistent with budget-constrained purchasing. Time-trend analysis and 10-year forecasts suggest that premium-feature growth will remain concentrated in affluent retail environments and the online channel, while low-income stores are likely to continue transitioning away from the lowest-quality lens options. The pace of this transition is expected to depend on supply-chain stability, inventory capability, and the availability of affordable mid-tier alternatives. Overall, coating-type selection in Iranian optical retail reflects durable socioeconomic segmentation, with implications for demand forecasting, inventory management, and service planning over the coming decade.
Keywords: Spectacle lenses; Lens coatings; Optical retail; Socioeconomic stratification; Demand forecasting

1. Introduction

Understanding how spectacle-lens feature packages are distributed across retail segments is essential for anticipating near-future demand and for planning inventory and service delivery. In Iran, purchasing channel and local socioeconomic context appear to influence which coating types are selected, producing a segmented market in which premium options concentrate in specific settings while low-quality products contract. The present editorial summarizes observed coating distributions across high-income stores, low-income stores, and online sales, and interprets these patterns alongside the time trends shown in Figure 1 to outline a plausible 10-year direction of change.


A. High-Income Area Store
70
60
50
40
30
20
10
0
67.3
40.7
41.5
44.3
36.2
19
15.3
8.6
9.7
7.9
5.1
4.6
0
0
0
2021–2022
2023–2024
2025–2026
Blue Control
Blue Cut
Anti Reflex
Hard Coating
Photochromic
Log. (Blue Control)
Log. (Blue Cut)
Log. (Anti Reflex)
Log. (Hard Coating)


B. Low-Income Area Store
70
60
50
40
30
20
10
0
2021–2022
2023–2024
2025–2026
63.1
50.6
54.5
31.8
32.9
19.7
17.7
11.8
9.8
14.5
3.9
1.8
0.2
0
1.2
Blue Control
Blue Cut
Anti Reflex
Hard Coating
Photochromic
Log. (Blue Control)
Log. (Blue Cut)
Log. (Anti Reflex)
Linear (Hard Coating)
Linear (Hard Coating)
Log. (Photochromic)


C. Online shop
60
50
40
30
20
10
0
51.3
42.8
48
32.7
36.7
34.6
11.5
13.9
12.6
4.4
6.7
4.7
0
0
0
2021–2022
2023–2024
2025–2026
Blue Control
Blue Cut
Anti Reflex
Hard Coating
Photochromic
Log. (Blue Control)
Log. (Blue Cut)
Log. (Anti Reflex)
Linear (Hard Coating)
Log. (Photochromic)

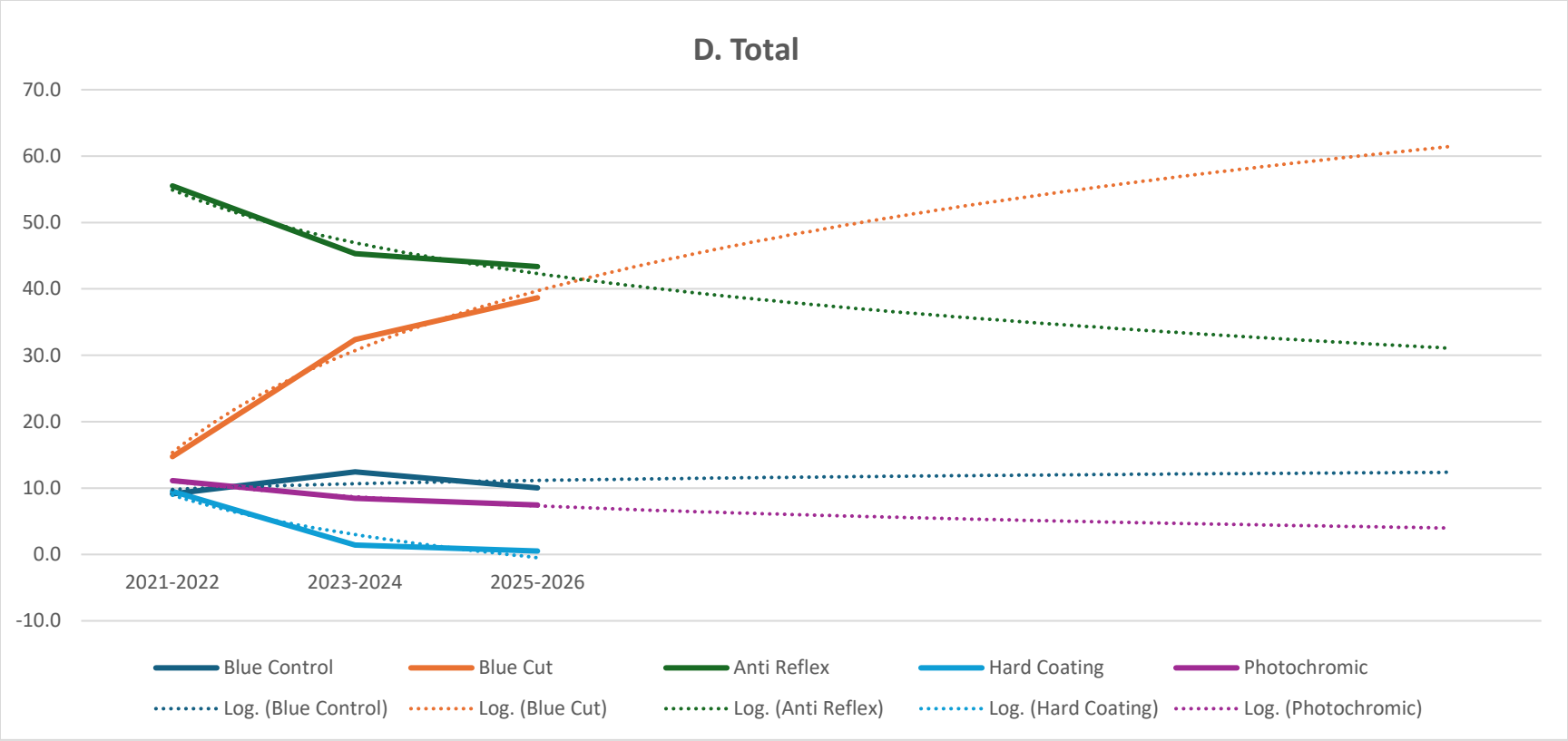


Figure 1. Time trends and 10-year logarithmic forecasts of spectacle-lens coating-type sales (percent frequency**) by retail segment: (A) high-income area store, (B) low-income area store, (C) online shop, and (D) total. Dashed lines indicate logarithmic forecasting for the next 10 years.**

The Iranian ophthalmic lens market is better characterized as a set of parallel submarkets defined by purchasing channel and lens feature package (coating/type), rather than a single unified category. This distinction is important because the coating groups examined here function as value-tier markers in routine purchasing decisions, and the resulting product mix is shaped by affordability, perceived quality, and channel-specific assortments.

2. Descriptive distribution of coating types by retail segment

In our stuyd, a total of 2521 ophthalmic lenses were recorded in the high-income area store group, 1674 ophthalmic lenses in the low-income area store group, and 420 lenses in the online shop group. In the high-income area store, Anti-reflex accounted for 45.6% (1149/2521), Blue Cut for 36.8% (928/2521), Blue Control for 11.7% (294/2521), and photochromic for 6.0% (150/2521). In the low-income area store, Anti-reflex accounted for 51.9% (868/1674), Blue Cut for 26.0% (436/1674), photochromic for 13.6% (228/1674), hard coating (HC) for 8.1% (135/1674), and Blue Control for 0.4% (7/1674). In the online shop, Blue Control accounted for 46.7% (196/420), Anti-reflex for 35.0% (147/420), Blue Cut for 12.9% (54/420), and photochromic for 5.5% (23/420). Collectively, these distributions indicate strong stratification of premium-feature uptake by channel and income level.

3. Lens types and interpretation of observed trends (Figure 1A–D)

3.1. Anti-reflex

Across physical retail settings, Anti-reflex represents the largest share, indicating a stable baseline package around which other feature categories expand or contract. Accordingly, time-series changes in Figure 1A–D are expected to appear primarily as marginal shifts in share relative to Anti-reflex rather than complete replacement of the baseline offering.

3.2. Blue-light-filtering (Blue Control)

Blue Control is an expensive lens option, and its distribution is consistent with a strong affordability gradient. Its minimal presence in low-income retail and high share in online sales suggests that the online channel concentrates higher-priced purchases. This interpretation is further supported by the market structure in which online assortments are limited to well-known international brands, implying that the most expensive lenses are disproportionately purchased online. Trend patterns in Figure 1C should therefore be interpreted as premium-feature expansion within a high willingness-to-pay channel, while Figure 1B reflects constrained adoption under tighter budget conditions.

3.3. Blue-blocking (Blue Cut)

Blue Cut maintains a substantial share in both high-income and low-income physical retail, indicating a feature tier with broad acceptance and greater accessibility than Blue Control. In Figure 1D, Blue Cut likely serves as a key contributor to the overall mix because it is prevalent across multiple segments rather than concentrated in a single channel.

3.4. Photochromic

Photochromic lenses remain a smaller but consistent category across segments, with relatively higher representation in low-income retail than in the other two groups. In Figure 1A–D, photochromic trends should be interpreted as niche dynamics influenced by local pricing, promotion, and supply continuity, rather than as a uniform indicator of premiumization.

3.5. Hard coating (HC)

Hard coating (HC) in this context corresponds to CR-39, low-quality lenses without coating. Its absence in the high-income store and in online sales (0% in Figure 1A and Figure 1C) is consistent with avoidance of this low-quality segment in premium purchasing environments. Its presence in low-income retail alongside a decreasing trend in Figure 1B suggests ongoing substitution away from the lowest-quality option, plausibly associated with increasing general knowledge and rising expectations regarding lens quality.

4. Implications for the next decade (2026–2036)

The combined evidence from Figure 1A–D supports a segmented forecast. Premium-feature growth is expected to remain concentrated in affluent retail and the online channel, while low-income stores are expected to continue reducing reliance on HC, conditional on the availability of affordable mid-tier alternatives. The realized pace of these shifts will depend not only on consumer preferences and purchasing power but also on supply-chain and inventory capability, since high-mix lens portfolios are vulnerable to stock-outs and forced substitution. Evidence from the eyeglass lens industry indicates that information integration, inventory optimization, and logistics capability are associated with resilience under disruption and can materially influence continuity of higher-value lens availability. (1,2) Additional evidence from optical retail settings suggests that systematic demand forecasting and service-level-based replenishment policies can reduce stock-outs and improve alignment between demand and inventory, supporting a more consistent transition toward higher-quality offerings (3).

Conclusion

Overall, coating-type selection in Iranian optical retail demonstrates a clear, persistent segmentation by socioeconomic context and purchasing channel. Anti-reflex remains the dominant baseline across store-based settings, while Blue Cut occupies a broadly accessible mid-tier position; in contrast, Blue Control concentrates strongly in online purchasing, consistent with higher price points and brand-focused assortments. The presence of hard coating only in low-income retail, together with its decreasing trajectory in Figure 1B, suggests a gradual contraction of the lowest-quality CR-39 segment, plausibly reflecting rising consumer awareness and shifting expectations. Over the next decade, the most likely direction is continued premium-feature growth within affluent and online channels alongside further erosion of hard-coating demand in low-income settings, with the speed of change moderated by supply continuity, inventory capability, and the availability of affordable alternatives.

References

1. Kankoon S, Amornsawadwatana S. Inventory management strategies for business continuity: a study of the eyeglass lens industry during global crises. J Logist Inform Serv Sci. 2024;11(12):270-292. doi:10.33168/JLISS.2024.1214.
2. Kankoon S, Amornsawadwatana S. Supply chain risk in eyeglass manufacturing: an empirical case study on lens inventory management during global crises. J Risk Financial Manag. 2025;18(6):305. doi:10.3390/jrfm18060305.
3. Silaen TA, Iskandar YA. Inventory management with demand forecast for eyeglass lenses using the time series method at an optical store. J Emerg Supply Chain Clean Energy Process Eng. 2023;2(2):85-97. doi:10.57102/jescee.v2i2.65.