
THE EFFECT OF DISCOUNT POLICY, DELIVERY SERVICE, AND COMPETITION DENSITY ON THE FINANCIAL PERFORMANCE OF A RAPIDLY EXPANDING RETAIL CHAIN

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Abstract

This thesis examines the effects of discount policy, delivery service, and dynamic competition density on the revenue and profitability of a rapidly expanding retail chain. Using a panel dataset of 158,715 store-day observations from 140 outlets of a confectionery-café chain operating in Uzbekistan between January 2022 and June 2026, fixed- and random-effects panel regressions were estimated for both outcomes. The results show that discounting and delivery activity raise revenue but materially dilute gross margin. A dynamic, haversine-distance-based measure of competition density reveals that close competitors do not depress revenue and may instead raise it through agglomeration, while simultaneously compressing margin. The findings offer retail managers evidence-based guidance for discount policy design and new-branch siting decisions.

Keywords: panel econometrics, retail chain, discount policy, delivery service, competition density, cannibalization, profitability.

Rapidly expanding retail chains face a persistent managerial tension between growing revenue and preserving financial stability. Every newly opened outlet reshapes the competitive geometry faced by existing branches, redistributes local demand, and can, in some cases, cannibalize sales across a chain's own network. At the same time, discounting and online delivery — the two instruments most commonly used by retailers to attract and retain customers — can raise short-term sales volume while their longer-run effect on profitability is frequently underestimated. This tension is particularly acute in food-service and confectionery retailing, where thin margins, perishable inventory, and highly localized demand make store-level financial monitoring a managerial necessity rather than a convenience.

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The empirical literature has examined pricing, promotion, and channel policy effects on retail financial performance extensively, yet most existing studies rely on static or infrequently updated competition measures collected in developed-market contexts. For an expanding chain, however, the competitive environment is not static: every new outlet — the chain's own or a rival's — changes the competitive density faced by existing stores in real time. Ignoring this dynamic dimension can lead to systematic errors when evaluating discount and site-location policy. Building on panel-data methodology (Wooldridge, 2010; Baltagi, 2021) and the spatial-interaction principle that proximate units interact more strongly than distant ones (Tobler, 1970), this study develops a dynamically recalculated competition measure and applies it, together with discount and delivery indicators, within a fixed- and random-effects panel framework.

The analysis uses daily operational and financial records from 140 stores of a confectionery-café retail chain operating in Uzbekistan, covering January 2022 to June 2026 (158,715 store-day observations). For each store, three concentric competition rings — 0–500 m, 500 m–1 km, and 1–2 km — were constructed using the haversine great-circle distance formula and recalculated as of each reporting date, so that only competitors already open by that date are counted. This design captures how competitive density evolves as the chain itself expands. Fixed-effects (FE) and random-effects (RE) panel regressions, with standard errors clustered at the store level, were estimated separately for log daily revenue and profitability rate, controlling for discount share, delivery share, holiday and weekday indicators, weather, store format, trading area, seating capacity, and operating schedule. A Hausman specification test and variance inflation factor diagnostics supported model choice and ruled out problematic multicollinearity.

The results reveal a consistent “two-edged-sword” pattern for both discretionary policy instruments. Discount share has a strong positive effect on revenue (coefficient 1.6774, $p < 0.01$) but a strong negative effect on profitability (-0.3349 , $p < 0.01$): discounting drives short-run sales volume at the cost of the margin captured per unit sold. Delivery share shows the same dual pattern — the single strongest positive driver of revenue (2.0900) alongside a smaller but statistically significant negative effect on margin



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(−0.0052), consistent with the additional operating costs associated with last-mile fulfilment.

The dynamic competition-ring results are the most novel finding. Contrary to a simple cannibalization narrative, the density of competitors within the closest ring (0–500 m) is positively, not negatively, associated with revenue (0.0295, $p < 0.01$), consistent with an agglomeration effect in which spatially clustered, similar outlets jointly draw more foot traffic. The same close-range density, however, significantly compresses margin (−0.0067, $p < 0.01$), indicating that nearby rivals do not reduce footfall but do intensify local price competition. The 1–2 km ring shows the strongest positive revenue effect of all three rings (0.0688) with a near-zero margin effect, reinforcing the agglomeration interpretation at moderate distance. Distance to the chain's own nearest branch is not a significant predictor of revenue (0.0334, n.s.) but is a significant positive predictor of margin (0.0036, $p < 0.01$): branches sited too close to one another do not lose sales volume, but their profitability is measurably eroded, an intra-chain form of cannibalization operating specifically through margin rather than revenue.

These findings carry direct managerial implications. First, discount levels should be calibrated against their quantified margin cost rather than against sales-volume targets alone. Second, delivery-channel expansion should be paired with operational cost-efficiency measures, since its revenue benefit is being partly financed by margin erosion. Third, new-branch siting decisions should account not only for distance to competitors but for distance to the chain's own existing branches, since intra-chain proximity depresses profitability even when it does not depress sales. Fourth, competition density should be treated as a dynamic, continuously updated input to site-selection and pricing models rather than a static, one-time assessment. The study is limited to a single country, chain, and product category; future research should test the generalizability of these findings across other retail formats and markets, and examine the joint optimization of discount and location decisions.

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