



All you didn't know you have to ask about cluster analysis

Roy Gelbard

Cluster analysis is a set of techniques that organize data into sensible groupings. The ordering logic behind such grouping represents one of the most fundamental modes of understanding and learning across various fields, such as medical symptom classification or consumer market segmentation. Today, with increased availability of AI and data analysis tools, a user with basic technical literacy can easily operate these tools with only an interpretive understanding of how to read and interpret the results obtained and no knowledge about the underlying processing. This approach is very effective and reliable when we use stable techniques that yield identical results independent of operating conditions, but is risky when we use unstable techniques, such as cluster analysis, which produce different results with each change in the values of the operating variables. Therefore, it is appropriate to draw the user's attention to the components that affect the division of data into groups and the determination of the grouping logic. This article focuses on the core factors that affect the cluster analysis process, and highlights the components of the process that require in-depth knowledge and understanding, so that users can operate these tools in a way that ensures the reliability of the results obtained.

On cost and ownership: asymmetrical cost behavior in family firms and its consequences

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Family firms constitute a substantial part of the economy and consistently exhibit higher profitability than non-family firms. While prior literature attributes this advantage to unique governance characteristics, little attention has been given to the specific mechanisms underlying superior performance. This study examines cost behavior as a potential explanation. Building on recent evidence, we argue that family firms are less prone to agency problems, managerial overconfidence, and short-termism, leading them to adjust costs more cautiously and efficiently. Consequently, family firms are expected to display lower cost stickiness—or even anti-stickiness—particularly during revenue declines, thereby improving resilience and profitability during economic downturns. Our findings are consistent with these predictions.

Mortgage Choice: Financial Literacy, Inflation Expectations, and Credit Decisions

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This study examines how financial literacy and cognitive biases shape mortgage contract choice, with a focus on borrowers' responses to current inflation versus long-term inflation expectations, and the long-run implications of these choices for repayment burden. Using household-level data on approximately 33,000 mortgages originated in Israel between 2004 and 2010, we analyze whether indexation decisions align with macroeconomic signals that should guide optimal mortgage selection. The results indicate that borrowers from lower socioeconomic backgrounds rely heavily on current inflation as a primary input in their decision-making process, whereas financially more sophisticated borrowers base their choices mainly on inflation expectations. This pattern persists even after controlling for liquidity constraints, suggesting an important role for cognitive limitations in mortgage decision-making. At the same time, lower-SES borrowers tend to adopt conservative positions in short-term loan parameters, such as payment-to-income ratios and leverage, yet combine these with mortgage structures that are less suited to future inflation exposure, generating an inefficient long-run risk profile. Simulations of future payment paths show that these choices may lead to steeper increases in repayment burden under persistent inflation scenarios, thereby undermining long-term household financial stability. The absence of professional financial intermediation during the sample period allows us to attribute these patterns primarily to differences in financial literacy and macroeconomic information processing by borrowers, highlighting the potential role of financial education as a complement to regulatory policy in mortgage markets.

Company-Focused Sustainability: Enhancing Perceived Environmental Impact and Promoting Responsible Luxury Consumption

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Luxury firms are increasingly adopting sustainable practices. Yet existing research on consumer responses to sustainable luxury products has produced mixed results. Given the importance of sustainable consumption in addressing the climate crisis, it is crucial to identify conditions under which consumers are likely to respond positively to such products. To address this challenge, this research investigates a factor that may shape consumers' responses to sustainable luxury products. Specifically, we explore how the focus of sustainability messaging, i.e., whether the message is company- vs. product-focused, influences consumer response. Two laboratory experiments and a field study demonstrate that when the sustainability message is company-focused, consumer responses to the product are more positive than when the sustainability message is product-focused. Moreover, this effect is mediated by consumers' perceptions of the purchase's positive environmental impact.

Real-Time Risk Management with AI: Learned Uncertainty as a Bridge Between Probabilistic Models and Business Decision-Making

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In organizations, decisions are almost always made under uncertainty: partial data, information sources that are not always reliable, rapid environmental changes, and models that do not always reflect reality. In such situations, the challenge is not only predictive accuracy, but also the reliability of the confidence measure on which action is based: whether to authorize an automated action, escalate to human oversight, allocate a scarce resource, or defer a decision until additional information is available. When the confidence measure is not calibrated to field conditions, two symmetrical failures arise, each with a clear organizational cost: over confidence, which produces overreaction and false alarms, or under confidence, which produces excessive conservatism, delay, and missed events.

This paper presents a unified framework for managing uncertainty as an organizational resource: a transparent and auditable probabilistic core is retained, while an artificial intelligence component is added to tune, in real time, the system's "trust policy", that is, to determine at each moment the degree of trust in the model versus the degree of trust in the measurements, based on the operational context and internal coherence signals. The present paper builds on three previous studies by the authors, each of which presents a complementary application of the same approach in a different context. Here, the three components are integrated into a single framework, with a uniform managerial formulation that enables translation of the principles into threshold policies, controlled escalation, and resource allocation under risk. Adaptation is performed under stability and legality constraints, thereby preventing "aggressive adaptation". The framework was demonstrated in three complementary applications, and it highlights a critical managerial distinction between improving average accuracy and improving reliability that can be translated into threshold policy, resource prioritization, and risk reduction.