

# ***ACDT-Group.28***

## ***-Justification Document-***

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## ***A.Why certain "non-significant" variables might still matter***

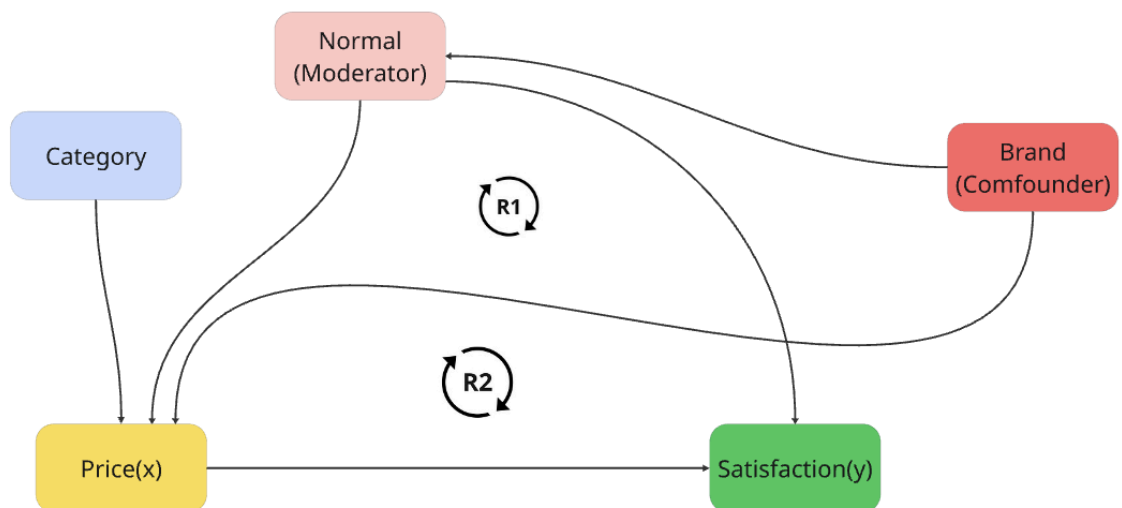
### ***a.***

In our System Map A, the relationship between Price and Satisfaction was tested using four linear models:

- 1.Ranking ~ Price
- 2.Ranking ~ Price + Category
- 3.Ranking ~ Price \* Brand Type
- 4.Ranking ~ Price + Normal

These models portray statistically measurable impacts like how category, brandType and skin type(normal) may confound or moderate the price–satisfaction relationship. However, this framework is inherently limited. It assumes that only variables with significant coefficients ( $p < 0.05$ ) are meaningful. In real systems' consumers, there are many hidden variables affecting perception and satisfaction indirectly even if they do not "appear significant" in regression analysis.

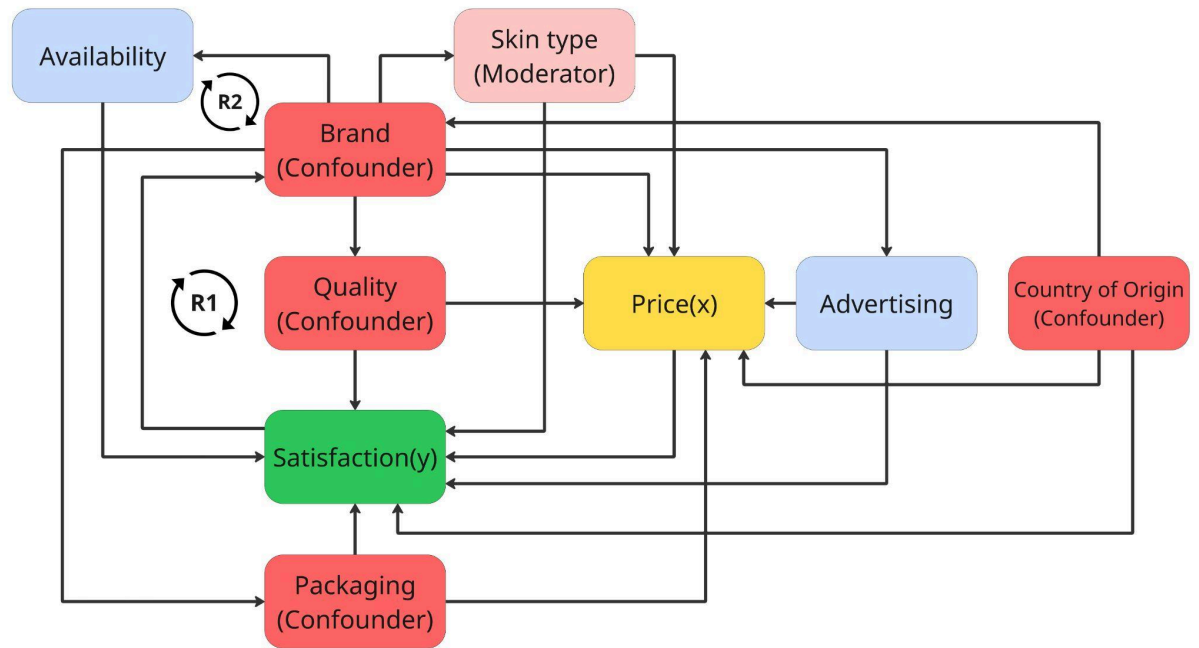
System Map A is purely about quantifiable relationships:



This approach allows us to capture direct and conditional effects of price, but does not consider broader behavior or context. For instance, it cannot answer questions like why two commodities with same price and brands respectively have unique satisfaction scores.

**b.**

To address this limitation, system map B integrates those non-significant, but theoretically significant variables in terms of how consumers perceive price, quality and fairness. The extended model includes six variables:



Variable	model type	why it still matters
Quality	Confounder	Packaging shapes both expectation and sense of worth.
Packaging	Confounder	Packaging can engender emotions. Packaging itself influences perceived emotional gratifications and anticipated results even though it may not be statically significant.
Advertising	Mediator	Advertisements promote perceived efficacy. It is easier to accept a high price if backed by strong communication.
Country of origin	Confounder	National image affects perceived credibility. "Korean" skincare versus "China"-made cosmetics".
Availability	has variability	Easily available products raise the convenience, utility and repurchase. And meaning even if price utility remains constant
Skin Type(Oil and	Moderator	Price has different effects

sensitive)		on different people's skin types. For example, an expensive moisturizer may satisfy those with dry skin but lighten depending on its nature those who are oily skinned.
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Real action mechanisms that affect satisfaction through perceptivity, accessibility and trust are all captured by these non-significant variables.

As Kaplan (2020) comments, "non-significance may be a result of limited data, but not inapplicable, especially not within systems driven by human judgment."

## ***B. Policy implications if we ignore these hidden features***

There are THREE policy implications:

1. Misleading price-based policy
2. Reinforcing consumer inequality
3. Loss of behavioral insight in research

### ***1. Misleading price-based policy***

The higher the price, the more pleasure we can have. If producers and brands assume that higher prices provide better quality and higher consumer satisfaction, they are actually simplifying consumer behavior. If we don't care about quality and packaging, subsidies or pricing strategies encouraged by such fruits of progress will favor the most famous brands, but exclude other high-quality products. For example, Han et al.(2019) found that minimalist packaging in mid-range cosmetics, even without higher prices, increased consumer trust and happiness very quickly. Policy implication is to enforce standardised labelling for quality of materials and packaging claims to combat deceptive luxury marketing.

### ***2. Reinforcing consumer inequality***

It is important to note that data interpretation may be reinforcing market bias when "hidden" confounders such as Country of Origin and Advertising are excluded. In developing markets where imported products are sometimes perceived as better, even when local alternatives offer just as good quality. Kumar (2019) argues that by cutting prices, the firm is not only forfeiting profits but also leaving it unable to establish itself as a strong brand. Policy implication is to introduce consumer

education campaigns that highlight domestic product credibility and ingredient transparency.

### **3. *Loss of insight in research***

If “non-significant” variables are dropped during model refinement, we risk losing behavioral context. Richard H. Thaler and Cass R. Sunstein (2008) notes that there may be human behavior motivated by theories of justice or ethical norms that would go beyond the scope of what we have discovered so far. For example, advertising or country of origin might not be significant in our case due to measurement error or limited sample diversity, but they still carry systemic explanatory power.

## ***Conclusion***

The efficiency of the regression based system map A is statistically but conceptually narrow. The extended telemeter diagram B shows that only with a whole variety of trailing factors(quality, packaging, advertising, country of origin, availability, skin type) will affect customer satisfaction in any way at all.

Research and policy neglecting these variables leads to a narrow result, unfair market outcomes and weakened consumer trust, while more complete conclusions are simply impossible.

## ***References***

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